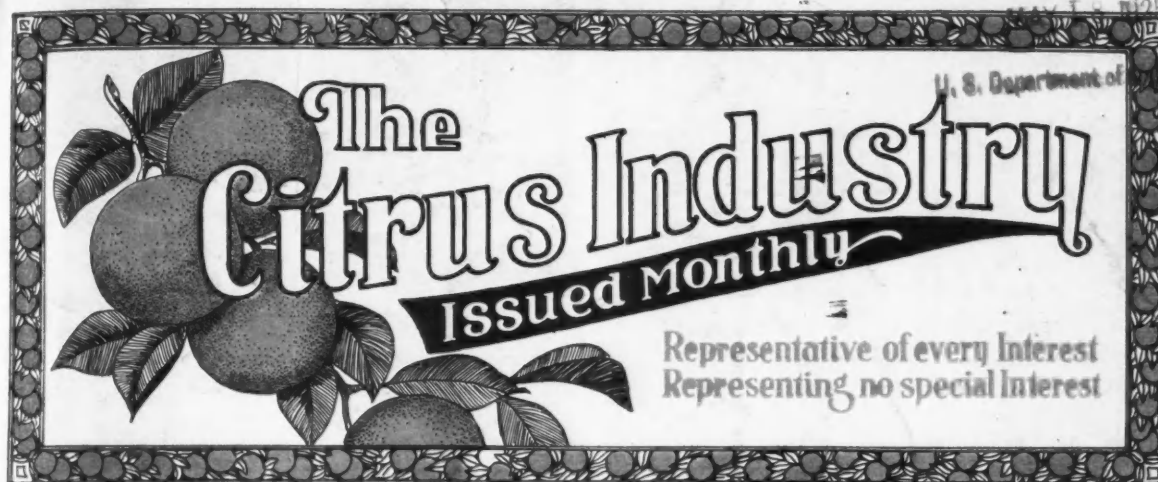


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VOL. 6, NO. 5

TAMPA, FLA., MAY, 1925

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## "The Wholesaler, the Retailer and the Consuming Trade Are Getting More Critical Each Season---

"Therefore, it is up to the growers to produce good quality fruit and to see that the packing house that handles their fruit both in the harvesting and packing is doing this work in the best manner possible.

"If growers will give the necessary attention to production, have their fruit handled through packing houses that give the fruit proper attention; and then select a marketing organization that will sell their fruit along scientific lines backed by judicious advertising, they need have no fear for the future of the citrus industry in Florida."—F. L. Skelly, Manager, American Fruit Growers Inc., in April number of The Citrus Industry.

Just any fruit to any old market will not produce the best results.

Specialized selling along commercial lines by a commercial organization, which realizes it must always perform just a little better than any other in order to obtain recognition is what has put AFG Sales Service, in connection with the BLUE GOOSE trademark, at the forefront in Florida. From grower to ultimate consumer this Service is thorough, efficient, complete. It has won the confidence of Florida citrus growers by realizing greater profits to them.

### AMERICAN FRUIT GROWERS INC.

ORLANDO, FLORIDA



FERTILIZER NUMBER

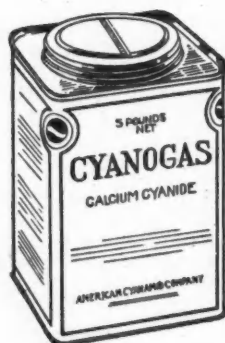
# *Tent Fumigation Successful Against the New Citrus Aphis*

The tent method of fumigating young trees with Cyanogas (Citrus Dust) for the new aphis has been found most successful, because it "holds the gas in" until it has had a chance to do its work thoroughly.

Extensive experiments conducted last year on several large Florida plantings demonstrated conclusively that Cyanogas (Citrus Dust) properly applied will control the New Citrus Aphis.

## **CYANOOGAS** (REG. U. S. PAT. OFF.) **CITRUS DUST**

is a combination of Calcium Cyanide and Sulphur, which liberates hydrocyanic acid gas on coming in contact with the air. This gas is one of the most effective known for insect destruction. If your trees are too large to fumigate under tents, dusting them with Cyanogas (Citrus Dust) in the open will give good results.



No citrus grower should fail to investigate the possibilities of this very effective material, Cyanogas (Citrus Dust). Its use means the difference between vigorous growth with perfect leaves and stunted growth with curled leaves.

Tell us your troubles; our entomologists will be glad to discuss them with you and tell you how you can use Cyanogas (Citrus Dust) for profitable results.

Ask for free leaflet 20-B, which gives full particulars.

*Also effective against Chinch Bugs on St. Augustine Grass*

### **AMERICAN CYANAMID COMPANY**

*of Delaware*

Union Terminal Warehouse  
Jacksonville, Fla.

511 Fifth Ave.  
New York City

There is every assurance that the Citrus Industry of this state is on a firm substantial footing. The grower received fair prices for his product last winter and may expect to do so in the years to come.

The forward looking planter will therefore lay his plans to round out his acreage and right now reserve the choicest trees to insure his getting exactly what he wants.

**"Glen Trees Grow"**

## Glen Saint Mary Nurseries Company

**Offices:**

Tampa,  
8th Floor  
Citrus Exchange Bldg.

Winter Haven,  
First State  
Bank Bldg.

Orlando,  
Orlando Bank & Trust  
Co. Bldg.

Over forty-two years of Satisfied Customers has made this the largest

Citrus Nursery in Florida.

# A 25 Per Cent Increase In Citrus Fruit Sales

Carlot sales of oranges and grapefruit by the Florida Citrus Exchange, thus far this season, are 25 per cent greater than those of the corresponding period the preceding season.

Increased sales have been accomplished by Exchange marketing representatives in every section of the country. In the West, where it has developed many new markets, Florida Citrus Exchange sales this season are more than 100 per cent greater than those of last season.

## Have You A Sealdsweet Extractor?

The new Sealdsweet Juice Extractor, manufactured by the Florida Citrus Exchange to make it easier for people to use the juices of Florida fruits, becomes more popular every day.

If you have not already purchased one, do so now while the present supply lasts. The price is \$1.50 delivered, except West of the Rockies, where it is \$1.75. Send your order to the Juice Extractor Dept., Florida Citrus Exchange, Tampa, Florida.

These sales records indicate more than the appreciation by Florida growers of the money-making advantages of the Florida Citrus Exchange's nation-wide marketing service.

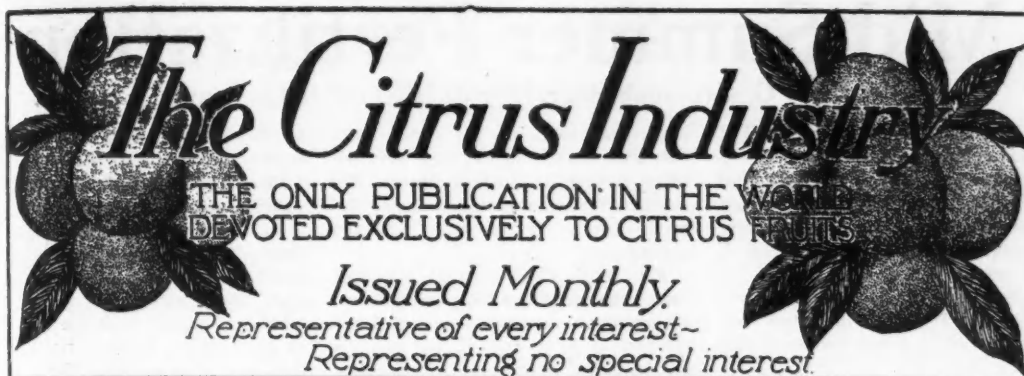
They reflect the growing understanding and conviction among citrus growers that the Florida Citrus Exchange alone, properly supported, can make of this state's fruit business the profitable, stabilized industry they want it to be.

## Florida Citrus Exchange

A Cooperative Organization of 7,000  
Florida Orange and Grapefruit  
Growers

Headquarters at Tampa





Vol. 6

TAMPA, FLA., MAY, 1925

No. 5

# Fertilizers and Soil Building in the Citrus Grove

By Bayard F. Floyd

Haphazard feeding of citrus trees pays no more than the haphazard feeding of animals. The fat hog or the fat steer is made by careful and systematic feeding with well balanced foods. The hens that lay the most eggs are carefully fed with the proper well balanced foods. So the citrus trees that produce the most fruit and fruit of the best quality and size are those that have been properly fed with well balanced fertilizers.

The ideal balanced fertilizer contains the following:

"(1) the three elements of fertility, ammonia, phosphoric acid, and potash, in such form that a portion becomes immediately available to the tree;

"(2) other portions that gradually become available under the action of soil bacteria;

"(3) organic compounds rich in humus; compounds that will improve the condition of the soil;

"(4) other essential elements of vitality and productiveness; elements that maintain the sweetness of the soil and stimulate bacterial action."

However the grower will not make the mistake of depending upon the organic elements in the commercial fertilizer to build up the humus content of his soil. These elements only help to supply a deficiency that can be better and more economically supplied by growing and turning under cover crops, with the use of stable compost in exceptional cases.

It is difficult to make fruit of good

quality on land that lacks humus and organic matter. Trees on "sand soaks" are often unhealthy and the fruit is worthless. Some of the best fruit is made on the hammock lands where the soil has been built up by years of slow accumulation of humus and organic matter.

The building of the soil is a slow process and requires years of time. The grower who would build up his soil must adopt a definite program and carry it thru year after year.

The growth and turning under of a light cover crop on the high pine lands does little more than maintain the soil and provides little or no accumulation. Cultivation and other factors tend to "burn it" out of the soil, so that at the end of the year very little is left. The removal of the crop for hay is disastrous.

On the other hand, the turning under of excessive amounts of decomposable matter or of green material in sandy soils may prove harmful. It may make the soil too porous so that it will dry out excessively; or it may provide an excess of organic compounds that will induce coarse fruit or bring on the disease dieback in the trees.

Decomposition of organic matter in the soil is a series of chemical changes brought about by organisms and the active chemicals in the soil. The character of the chemical changes and the nature of the products formed varies very greatly and depends upon temperature, moisture, air and

other conditions in the soil. The compounds formed are complex and many. Some are stable and others are very unstable.

The products of decomposition in hammock soils are somewhat different in kind and quantity from those in the high pine soils, and this difference reflects itself upon the nature of growth made by the tree and fruit.

In order to reach the high degree of fertility required for best fruit production, it is necessary each year to add organic matter to the pineland soils in excess of what will be destroyed by cultivation and other factors. The nature of the materials added will be varied because the products each have their individual influence upon the growth character.

Sandy soils that contain a sufficiency of humus and organic matter hold moisture longer and give the trees a more even supply during dry periods. They absorb and hold the soluble plant food so that less is lost thru leaching, thus in turn less fertilizer is required to supply the needs of the trees. The roots branch and rebranch to a greater extent providing a better feeding surface and more normal feeding conditions for the tree. The fruit grown on such trees is of a smoother texture, more even in size and of generally better quality.

Therefore the grower who will grow better fruit and at less cost will adopt a program for soil building in his grove. The period previous to and

Continued on page 36

# Mid-Summer Fertilization

By J. G. Grossenbacher, Florida Insecticide Company

(Editor's Note—The importance of the mid-summer fertilization of citrus groves is of such moment that The Citrus Industry feels that every grower should make a careful study of the matter. The following by J. G. Grossenbacher of the Florida Insecticide Co., a noted Florida authority, is submitted with the hope that it will be read by every reader of this magazine.)

Since the mid-summer fertilization must meet the needs of trees for a longer period than any other application in the year, it is important that it be made from materials which have the longest possible feeding time consistent with the common sources of fertilizers. This means that a considerable percentage of the ammonia must be derived from organic sources. The percentage composition should be about 3-8-5 or 4-8-5, depending upon the soil type and the condition of the trees and crop to be maintained. The most satisfactory and enduring base for this application is ground bone. Either steamed bone or raw bone may be used, or both. In many cases some high-grade tankage can also be substituted for some of the ground bone where a higher percentage of organic ammonia is desired. The bone will thus be a source of phosphoric acid and at the same time furnish quite a portion of the ammonia. The balance of the ammonia is supplied from nitrate of soda and sulphate of ammonia.

If you are running your grove on a plan of reduced cultivation it will be an advantage to use a lower percentage of ammonia from organic materials than you would with frequent cultivation during the first half of the season.

If your crop set is heavy or your fruit tends to run to small sizes it is advisable that all the balance of the ammonia be derived from nitrate of soda. That will increase your sizes even though you have a heavy crop. However, if your setting is light or your sizes are unusually large it is better to use more sulphate of ammonia in the above formula. On this subject I wish to mention again the fact that the use of nitrate of soda results not only in larger fruit but in fruit that holds up better on trees after maturity than is the case where much sulphate of ammonia is used. It seems that a free use of sulphate of ammonia at this time not only results

in smaller fruit but fruit that dries out more quickly at the stem end, besides having an insipid flavor. The character of the juice seems to depend largely on the nature of the ammoniates.

The number of pounds per tree should be in proportion to the size of the trees, their condition, and the amount of fruit set. If the crop is moderate to light, trees will make a satisfactory growth during the latter half of summer and produce fruit of good size with a fairly light application of 3-8-5 or a somewhat lighter dose of 4-3-5 while if the setting is heavy it is necessary to give a liberal dose of 3-8-5 or a lighter application of the 4-8-5 to avoid the production of a high percentage of undersized fruit. However, even with a liberal use of fertilizers of correct composition much of the fruit is likely to remain undersized on heavily loaded trees if rust mites are not controlled.

The formula with 3 per cent ammonia is suitable to many more groves than one running 4 per cent, though the latter is very profitable for underfed groves or groves that have undergone severe conditions, and yet are bearing moderate to heavy crops of fruit. By the use of a higher percentage of potash trees do not respond so strongly to the ammonia end of the formula. It seems that by increasing the percentage of potash it usually is also necessary to increase the percentage of the ammonia to get strong growth. Groves not cultivated intensively can stand more or higher percentages of ammonia than those in which cultivation is frequent from winter to mid-summer. Less cultivation also results in smaller sizes unless a higher percentage of nitrate is used.

The mid-summer application of fertilizer serves to maintain and develop the crop set in spring, and to produce new growth on which to hang most of the next crop. Were it not for the weather conditions it would be better to make this application the latter half of June so as to shorten the period between the mid-summer and fall applications. But usually the rainy season starts in late May and early June and if groves are worked later than the middle of June there is but a slight chance for the growth of the necessary cover crop and this results in damage to the soil which eventually damages the trees.

Owing to these facts it is usually

best to plan the fertilizer application in such a way as to finish the work in the first half of June and thus encourage the growth of a good cover crop. However, in groves where natal grass is the dominating cover crop there is less need of hurry because that gives plenty of growth even when cultivated until the latter part of June. Natal grass is not as bad a pest in groves as some think.

## PORT ELIZABETH, SOUTH AFRICA, CITRUS SHOW

In a report to the Department of Commerce, Consul R. P. Clark, Port Elizabeth South Africa, states that the Port Elizabeth Agricultural Society announces that a special citrus show will be held at Port Elizabeth in June or July, 1925. Growers of citrus fruit in the Midland districts have shown great interest in the proposal, and entries are expected even from as far afield as the Northern Transvaal.

Mr. Clark states that large tracts of land have been planted to citrus both east and west of Port Elizabeth, and the city has become an important port of shipment. 137,561 cases of citrus fruit were exported from Port Elizabeth in 1924 as against 48,470 cases the previous year (1923).

Mention is also made in his report by Mr. Clark of the fact that the sixty-first annual show of the Port Elizabeth Agricultural Society will be held at the Show Grounds, North End, Port Elizabeth, on March 24, 25, 26, and 27, 1925. Prizes aggregating £3,330 in value are offered by the Society for the best exhibits of produce, livestock, agricultural and dairy products, fresh and preserved fruit, South African manufacturers, etc., and many special cups and trophies will be awarded. Exhibits have already been entered in large numbers not only from the districts immediately tributary to Port Elizabeth but from other parts of the Union.

## STEPPE BY STEPPE

A Russian was being led off to execution by a squad of Bolshevik soldiers on a rainy morning.

"What brutes you Bolsheviks are" grumbled the doomed one, "to march me through a rain like this."

"How about us?" retorted one of the squad. "We have to march back."

—The Pointer.

# Summer Fertilization

By E. H. Harlebaus

The summer application of fertilizer is just before us, a time for serious consideration of the role of fertilizer in producing high grade fruit and next year's bloom.

Possibly more harm or more good can be done through the summer application of fertilizer than at any other period. Correctly made, the fruit matures thin skinned and of a good flush of growth. Incorrectly made, coarse fruit, dieback and other troubles result, or the grove suffers for food, fruit fails to size up and next year's bloom is disappointing.

What formula shall we use to insure a correct application? There are almost as many answers as groves. First and foremost, watch the Ammonia carefully, both as to sources and percentages. The source should largely be slow, which means a fairly high content of organic material. Bone meal, Tobacco Stems, Peruvian Guano, Castor Pomace, are safe sources. There should be some chemical sources but not over 50 per cent., of the ammonia contents at most. On the light, sandy soils, three-fourths of the ammonia may well come from organics; on the heavier soils less will do, as will a lower percentage. For the bearing grove, two or three per cent. will be enough, and for the young grove three to four, unless the groves have been starved. If a heavy application has been made in the spring, followed by dry weather, stay to the lower percentage; if the moisture has held up fairly well, use the higher figure. In any case, use enough to maintain the crop and get a flush of growth—more is likely to get the grove in trouble. If a mistake is made, make the percentage low rather than too high.

As a general thing, the earlier the application is made, the better the trees will respond. June 1st should see the fertilizer on and the last cultivation made. May 15th is not too early, if there has been no protracted drouth.

Once the fertilizer is applied and worked shallowly, give the cover crop a chance. The quicker the ground is shaded from the summer sun, the better will it retain and increase its organic life. When that life departs, the grove is very near or already in trouble. Try by every means to grow more cover crops each year so long as there is sunlit

space between the trees. Nothing is better than legumes, such as crotalaria, beggar weed, cow peas and velvet beans. Anything is better than nothing.

Young trees should be handled somewhat differently. Increased growth results if a strip on each side of the tree row is kept clean with a one horse acme, leaving the middles to grow up. These clean strips should be run one way one year, and at right angles the next season, in order to keep from sterilizing the strips of soil between the trees.

Cultivation is closely bound up with ammonia so far as growth and fruit quality are concerned, hence its mention before taking up the other fertilizer elements. The least cultivation that will maintain moisture is best for the bearing trees, and the least that will keep down weeds from the rows of trees is best for the young grove. In all cases, cultivation should be shallow.

Phosphoric Acid and Potash are the other materials in which we are interested. High Phosphoric Acid apparently helps to hold up the quality of the fruit. The summer application should carry not less than 8 per cent. of available Phosphoric Acid Superphosphate has been for years a standby for Available Phosphoric Acid. See that the summer applications carry a portion of the Phosphoric Acid from this source.

The summer season is a good time in which to use the high Potash application. By "high" is meant 8 to 10 per cent. This applies to bearing trees. Five per cent. should be enough for the young trees.

The season following the summer application is one period of the year which does not ordinarily call for much control work on insects and diseases. If Bordeaux Oil has been used in late April or early May, or early June, or early July, Rust mites may appear if heavy rains have not set in. Sulphur Dust or liquid Lime Sulphur should be applied. These applications generally will be all that are necessary during the summer season.

When spraying is done, see that it is done thoroughly and at this time of year, watch the thermometer. Stop spraying if any burning appears, and it is possible if the temperature goes above 90 degrees Fahrenheit.

Remember that the summer appli-

cation can make or mar a pretty crop of fruit. Keep the Ammonia low, make the application early, and get a cover crop started.

## SATSUMA GROWERS MEET

On April 20th the directors of the Satsumaland Fruit Growers enjoyed the hospitality of Chipley during their regular bi-monthly meeting, which was held at the Chipley hotel where members and their friends enjoyed an excellent dinner, Mr. Williams serving as toastmaster. Other after dinner speakers were Mr. Farmer, Mr. Boostrom, and W. L. Wilson. Among those present were W. L. Wilson of Jacksonville, President; W. A. Sessoms, Bonifay, Secretary-Treasurer; C. R. Boostrom, Lynn Haven, J. D. Farrish, Vernon, D. J. Farmer, Dothan, Ala., and W. A. Mabry, Cypress. Three members of the Board are members in attendance at the State Legislature.

The business of the Association is in fine condition, and greater interest is being shown by people throughout the section. The plantings of satsumas as reported for the year were much in excess of that of last season. Condition and growth of present plantings are quite satisfactory.

Mrs. Wilson, Mrs. Boostrom, Mrs. Sessoms were present at the meeting and others present were Mr. and Mrs. Hartman of Illinois, Messrs. Steele and Stephens of the Glenn St. Mary's Nurseries, Mr. Hunter of Bay County and interested citizens of Chipley and elsewhere.

A delightful feature of the day was the trip to Glenn St. Mary's and the wonderfully beautiful "Falling Water," the Nurseries keenly interesting visitors who were not familiar with the industry, and the bit of scenery known as "Falling Water" not failing to delight and charm as a bit of Florida's Wonderland.

The next meeting will be held at Panama City on the third Monday in June.

## SUCH A COMEDOWN

St. Peter: "That new arrival seems disappointed in heaven."

Gabriel: "He is. He'd just finished reading a real estate agent's prospectus of a new residence tract when his liver ran over an embankment."—The American Legion Weekly.



# Fertilizers and the Fertilizer Industry from the Manufacturers Viewpoint

By C. T. Melvin, Vice President Gulf Fertilizer Co.

Fertilizer! The very name brings to the average mind unpleasant odors and dust-covered factories where something mysterious is done to unknown materials in producing a product to make plants grow. To the grower fertilizers are an indispensable necessity, and it has long been realized in these days of keen competition, that an attempt to grow anything without fertilizer is wasted effort. What are fertilizers? Whence do they come? Are they a necessary cog in the great wheel of modern commerce and progress? The story of fertilizer and the great industry which produces it is practically unknown to those people who use it in such huge quantities.

From time immemorial, the tiller of the soil has found that land will not continue to reproduce abundantly year after year. Therefore, in the early days it was the practice to continually clear and plant new land. As economic conditions became more complex, and as the population became more dense, it was not possible for the tillers to keep moving, and the thought developed to try to improve the soil then in use. Our American Indians put fish into the hills of their maize, and this practice was followed for years by the early white settlers along the Atlantic coast. Seaweeds of various kind, cast up during storms were likewise spread on the ground. The people who practiced this early fertilization did not know why they did it, but they saw the improved results in their crops. The overflow of the Nile River, with its resulting deposit of mud rich in decayed animal, vegetable and mineral matter, has for countless centuries been considered by the natives as a special recurring manifestation of the pleasure of the Gods and elaborate and sometimes gruesome ceremonies were performed as offerings to the River Dieties to assure the annual blessing of plant-food for their fields. With the swift passage of time great progress was made in the study of soils, and people began to dimly realize that certain animal, vegetable and mineral substances could be applied to growing crops to hasten maturity and increase

the yield. Chemists and scientists have labored for years until now there is a vast array of materials which can be used by the grower with an ever increasing certainty of what results can be reasonably expected, under normal conditions and by the practice of accepted methods of good cultivation.

To go into the evolution of the study of plants, to discuss the development of agriculture and agricultural chemistry, to relate the amazing discoveries of the scientists in laboratory and field, would be to review the rise of our civilization from a very primitive existence to the very complex present. It is only in very recent years that the minute organisms in the soil were admitted to be present and to have any effect upon plant life. You now hear much of bacteria and of bacterial action.

What are fertilizers? From whence do they come, and briefly what are the methods used in the manufacturing which produce the articles known collectively as commercial fertilizer? During the great World War, this industry was classed among the necessary ones and every help was rendered by the Government so that the food and clothing supply would meet the demand, for it was recognized that Napoleon spoke a great truth when he said: "An army travels on its stomach." I will therefore discuss briefly some of the most important fertilizer materials and their sources, and will touch upon the industry itself, its operation and its magnitude.

This fertilizer business is an exacting mistress which jealously forbids any division of attention or devotion. She, fickle jade that she is, bestows her smiles and frowns without apparent rhyme or reason, and like her human sister who has been scorned or neglected, turns profits to losses just "because". This undivided attention and devotion is necessary because as you will hereafter see, our materials come from many and various places, and frequently encircle the globe before they reach the ultimate consumer. This requires a careful study of markets, of the rate of

exchange, of water and rail transportation, of present and prospective demand, and the probable selling price of the finished product upon which collections are based. The lack of proper appreciation of any of these fundamentals is sure to mean loss.

Fertilizers are concentrated plant food and are made from animal, vegetable and mineral materials. The gathering together of these various materials is one of our great commercial epics, including as it does romance, tragedy and adventure. Dried animal blood, ground, steamed, or raw bone, ground animal meat and bone called tankage, fish, bird and bat guano, cotton seed meal, castor salts, and many other things are now acknowledged and accepted sources of plant food. The grower unconcernedly hauls his "guano" to his field, rarely thinks that the materials contained therein have been gathered from the four corners of the world; from the depth of the land and the sea, from the air, from evaporated water, from the bottom of prehistoric lakes, from noxious climes and distant places, and that the tongues of laborers gathering them have babbled many strange languages. What great convulsion of nature drained the ancient sea where now lie the inexhaustible German potash deposits which, it is estimated will last many hundreds of thousands of years? What great marine disasters are responsible for the vast beds of aquatic life? The broad plains of the Argentine and our own country are teeming with vast herds of cattle from which our animal ammoniates are obtained. Do we in the rush of modern life hear their cry of anguish as they go to meet their destiny? Nitrate of soda, the most soluble and available of plant foods, does not just "happen," but is the dissolved and evaporated result of the crude salts taken from the Chile deposits, where under a blazing sun, the natives labor in the intense heat—and it has been known to be rainless there for fourteen long years. The air is now called upon and we have calcium cyanamid and other air nitrates which are becoming of increasing importance.

## THE CITRUS INDUSTRY

Nine

So you can see from this that our fertilizer materials are gathered together from everywhere, and as a result of the labors of our scientists and chemists, coupled with the experience, vision and capital of the manufacturer, our growers are able to make the land smile and produce the luxury.

The best known plant foods are ammonia, available phosphoric acid and potash. Nitrogen is perhaps the correct word, as few plants directly absorb its equivalent, ammonia. Ammoniates are divided into two classes: inorganic and organic. Nitrate of soda and sulphate of ammonia are the two most common sources of inorganic ammoniates, the first, as stated, coming from Chile, and the last from the coke and steel furnaces and kindred industries in this country and abroad. The organic materials come from the animal and vegetable by-products or refuse of various industries. Raw and steamed bone, blood and tankage, are the most common animal ammoniates. Cotton seed meal, castor pomace, rape meal, peanut meal, etc., come from our oil mills and represent what is left after the oil has been extracted. Peruvian guano is again being received into this country in large quantities and is excavated from the caves inhabited by numberless millions of birds along the rainless coasts of Peru. The gathering of this expensive and valuable material is now controlled and regulated by the Peruvian Government. Along the coasts of our beautiful Gulf of Mexico are erected great numbers of bird roosts, from which at regular intervals is taken the refuse from the pelicans, sea gulls and other wild bird life. Bird guano is called a "natural" guano and runs high in ammonia and phosphoric acid. Practically all animal ammoniates contain phosphoric acid to a greater or lesser degree, and even the vegetable materials show small content.

Phosphoric acid from bone is especially desirable because it is slow in its action as nature must break down the bone structure and nitrify it before the plant can absorb it. By far the greatest amount of phosphoric acid comes from the natural deposits of phosphate rock found in many places and countries throughout the world, but the best grades and greatest quantities come from Florida, and the mining and shipping of phosphate rock is one of the state's most important industries. This rock is a tri-calcic compound, and as such is not available to the plant as food. When finely ground and mixed by

special machinery with sulphuric acid, it is changed to a mono-calcic compound, and the locked up phosphoric acid is made available as it readily goes into solution when it comes into contact with water and can thus be taken up by the plant. It is worth while to mention here that there is practically no such thing as "free" sulphuric acid in commercial fertilizers made from phosphate rock, nor is there any dangerous results from its use. Growers who are laboring under this "acid" delusion, are urged to write the Florida Experimental Station, under the direction of which exhaustive experiments have been made and the use of acid phosphate heartily endorsed. In fact the name acid phosphate is a misnomer. It should be superphosphate.

The next of the most important elements is potash. Small percentages of potash are found in many organic and animal substances such as hardwood ashes, cotton seed meal, tobacco stems, refuse from the sugarbeet refineries, feldspar, cement dust, the saline salts of some of our western prehistoric inland sea beds, from the great marine vegetation known as kelp, and from many other places and things. The principal sources, however, are Germany and Alsace. The grades most commonly known to the trade are kainit, manure salts, double manure salts or sulphate of potash-magnesia, sylvanite, murate of potash, sulphate of potash and carbonate of potash. Each of these materials is important for the particular purpose for which it is used. Sulphate of Potash is used in citrus fertilizers, and sulphate of potash-magnesia, while also used for citrus, has been found of special benefit to the tobacco growers because of the magnesia it contains, as it is said that this material improves the burning quality of the tobacco. Some potash is being produced in this country, and the industry will grow. It is hoped that deposits of commercial importance will be found which will make this country independent of Germany and France, as potash is very necessary in the making of explosives.

Until that happy time, probably not so far distant as it might be thought, when the fertilizer business is put upon a cash basis, the financing of a fertilizer business is of vast importance. While buildings are rarely ornate, they must be large, and constructed so as to stand great weights and the corrosive effect of chemicals and moisture. Much of the machinery is heavy, and in what is known as a complete manufacturing plant is very expensive and requires

frequent replacement. The present method of making sales on time requires much more capital than in a business where there is a quicker turnover because wherever time sales are made, there is an inevitable accumulation of outstanding receivables, and it is remarkable to what degree people lose interest in an account if agricultural conditions are not ideal. Therefore, fertilizer manufacturers have in the past been acting as the banker for the grower selling him, in many instances, materials on time for which actual cash has been paid—and incidentally, practically all materials have to be paid for spot cash and in many cases in advance of their shipment from some foreign country. Engineering companies now design fertilizer plants complete, including everything to begin operation. Economies in manufacture have been given careful thought, and every modern labor saving device is necessary in order to meet the increased cost of doing business and the narrowing margin of profits.

Fertilizer manufacturing companies are divided into three general classes. Complete manufacturing plants consist of sulphuric acid chambers for the manufacture of sulphuric acid, rock grinding machinery by which the phosphate rock is reduced to a very fine powder, acidulating units by which the sulphuric acid and ground phosphate rock are mixed to make superphosphate, and then the batching mills, mixers, grinders, remilling and bagging machines necessary for the assembling of the various raw materials into the finished product, and make it ready for shipment to the customer. The second class of factory is that which does not make its own sulphuric acid, but buys it from other manufactories, and is the same as the first with that exception. This is known as a wet mixing plant. The third class does not make sulphuric acid or superphosphate, but buys the superphosphate and uses it in mixing the finished product. This is what is known as a dry mixing plant and is the same as the first and second, excepting for the manufacture of sulphuric acid and superphosphate.

More technical knowledge is necessary than is commonly supposed. Not only must the manufacturer understand material markets, etc., but he must know what and how to mix, after he has his plant and has bought his materials. Some materials will kill a growing plant when improperly used or applied while others will too greatly stimulate, and either produce no fruit

Continued on page 26



# Maturity of Citrus Fruits from a Legal Point of View

By Seth S. Walker, at Meeting of Florida State Horticultural Society

For many years the growers of citrus fruits have been confronted with the serious problem caused by shipment, early in the season, of immature, inedible fruit. There is no need of dwelling on the evils of this practice and the disastrous effect which it has on the market for good fruit. Most of you are already acquainted with these things through bitter experience.

The obvious remedy is to be found in legislation which will prohibit the shipment of immature fruit, but one of the most difficult features of such legislation is the question what constitutes maturity. How shall we determine whether or not a fruit is "mature"?

According to Webster's dictionary, a thing is mature when it is "brought by natural process to completeness of growth and development; fitted by growth and development for any function, action or state appropriate to its kind".

This definition gives us little comfort or help in the problem under consideration, for who is wise enough to say when an orange or grapefruit has reached "completeness of growth and development"? Is it just at that stage when the seeds begin to sprout and the fruit begins to dry? Is it when the corky abscission layer begins to form between the fruit and the stem, causing the fruit to drop? This might be considered "maturity" from the botanical view-point, but such standards as these would be unthinkable for practical use in controlling the shipment of our crops.

It seems to me that in this connection we might better discard the word "maturity" and substitute the "edible" or "palatable". For, after all, citrus fruits are raised and sold for the sole purpose of being eaten, and consequently the object of the law should be to insure the shipment of only fruit as can be eaten with enjoyment and satisfaction.

Some one—maybe several of you—will immediately rise up and say, "I told you so. We don't need a law. The only thing needed is for each grower to taste his fruit before he ships it". We have frequently heard this recommendation made in perfect seriousness and good faith. In fact it was made by one of the speakers at last year's meeting of our Society.

No fair minded person will deny that this would be the ideal method if every one were honest and had good judgment, and did not allow his judgment unconsciously to be influenced by alluring reports of high prices paid for early fruit. But somehow or other a man's sense seems to vary with the market reports, and there will always be a few shippers who are deliberately dishonest. We might just as well say that traffic should not include specific regulations—that dangerous driving should be prohibited, but each driver should be left to determine for himself what is "dangerous".

Any regulative law, to be effective, must have definite standards by which the regulations may be carried out and upon which court proceedings may be based in case of violations. The more "cut-and-dried" these standards can be made—the more the personal element can be eliminated from them—the better they are. Physical and chemical measurements are the most definite and satisfactory standards whenever it is practicable to apply them.

What sort of standards, then, may we apply to citrus fruits in order to judge their fitness for shipment? How can we make sure by definite tests that a fruit is good to eat? Certainly not by the color test, that unfortunate joker which still exists in our present state law! Not only is it impossible to make accurate statements regarding the degree of color exhibited by a given sample of fruit but, as has been frequently demonstrated, the color is not a reliable index of the edibility or maturity of fruit. No, let us forget about the color and give our attention to those constituents on which the flavor and food value of the fruit really depend, namely the sugar, acid, and other solids dissolved in the juice.

The first attempt in Florida to set a chemical standard for judging fruit was made by a commission of prominent horticulturists and chemists appointed for this purpose in 1912. They agreed and recommended that an orange should have at least seven parts of sugar to one part of acid in the juice before it is considered fit to ship. However, recognizing that the test should be one capable of being applied in the field or packing-house, and that sugar analysis could not

readily be made in a chemical laboratory, they suggested that a field test should be made for acid only, and that all oranges having less than 1.25 per cent acid should be passed.

As time went on and more data was accumulated it became increasingly evident that the RATIO of sugar to acid was a much more proper test than a mere maximum acid test. Then someone conceived the bright idea that, although it was not practical to determine SUGAR in making routine field tests, a similar result could be accomplished by determining the TOTAL SOLIDS which consist largely of sugar and solid. This total solids test to acid would of course be higher than the ratio of sugar alone to acid. All of the data available at that time indicated that proper ratios of total solids to acid would be 8 : 1 for oranges and 7 : 1 for grapefruit, and these ratios have been the basis for judging citrus fruits during the past ten years or more, although there has been some conflict with the Florida State law which still includes a color test and a maximum acid test instead of a ratio. These ratios of 7 : 1 and 8 : 1 were finally given definite recognition and adopted as standards by Federal government in September 1921, as announced in Food Inspection Decision No. 182.

The ratio standards have been a great improvement over the old color test and the maximum acid test. In fact, so far as I know, the 8 : 1 standard for oranges has given full satisfaction. But with grapefruit the case is different. Many complaints have arisen to the effect that the 7 : 1 ratio for grapefruit works gross injustice during the early shipping season and is not at all reliable as a means of distinguishing between good fruit and poor fruit. It has frequently been found that grapefruit which is obviously immature—dry, juiceless and insipid—will pass the test; while on the other hand fruit that has much better eating qualities because it is heavy with juice and full-flavored, although perhaps more or less sour, will fail to pass.

It may seem somewhat inconsistent to say that a simple ratio test is satisfactory for oranges and unsatisfactory for grapefruit, but when we study the subject we find that there is a real reason for such a difference. If

we study the composition of Florida oranges taken from the same trees at intervals during the season it will be found that there is practically always a steady increase of sugar and of total solids, and a steady decrease of acid. Consequently the **RATIO** of total solids to acid will also rise steadily—in fact, as a rule the ratio curve rises more rapidly than the total solids curve. It is plainly evident that with oranges the ratio is a fair measure of maturity. But when we make a similar study of grapefruit we find no such regularity of increase. Although there is a general tendency toward increase of total solids with the advancing season, there is frequently an equal increase in acid content so that the ratio remains practically constant or even decreases. Therefore it would seem that with grapefruit the simple ratio test cannot be taken as a measure of maturity, still less of edibility.

Those who have been studying this question have been impressed repeatedly with the fact that the early grapefruit which is good to eat is nearly always the fruit which has a high percent of solids in the juice, and that the higher the solids, the lower the ratio of solids to acid may be without making the fruit inedible. This observation has been made so often that gradually a "sliding scale" of total solids and ratio has been evolved which seems to fit the known facts much more than does the flat ratio of 7 : 1. This sliding scale is said to have been first proposed by one of the government chemists, after a thorough study of the subject, and is as follows:

If solids are less than 9 per cent the ratio must be at least 7 : 1. If solids are 9 per cent or over the ratio may be as low as 6.5 : 1. If solids are 10 per cent or over the ratio may be as low as 6 : 1. If solids are 11 per cent or over the ratio may be as low as 5.5 : 1. If solids are 12 per cent or over the ratio may be as low as 5 : 1.

During the early shipping season last Fall the dissatisfaction with the 7 : 1 standard, as well as other features of the present shipping regulations, became so acute that the Fruitman's Club, representing a large proportion of the citrus growers of the state, appointed a committee to investigate the matter and prepare a new law to be presented to the 1925 legislature. Since the committee was composed of non-technical men they called in to consultation a sub-committee composed of the State Commissioner of Agriculture, the Chief Chemist of the Florida Citrus Exchange, and placed upon this technical

committee the task of revising citrus fruit standards.

After a thorough study of the available data on Florida grapefruit involving 1500 to 2000 separate analysis, this technical committee has been forced to the conclusion that we still lack the necessary information on which to base a perfectly satisfactory standard for grapefruit, but is unanimously of the opinion that the sliding scale mentioned above is a big improvement over the present standard of 7 : 1. And they are of the opinion that the sliding scale can be still further improved by incorporating in it a minimum requirement of 8.5 per cent total solids. That is to say, this modified sliding scale will not permit any grapefruit to pass, whatever its ratio may be, unless the juice contains at least 8.5 per cent total solids. It is believed that this requirement will not work any hardship on the legitimate shipper of early fruit, but that it will be an effective means for preventing the shipment of dry, juiceless fruit which otherwise might get by on account of having low acidity and consequently a high ratio.

It has already been stated that hundreds of analyses were examined before arriving at the conclusions set forth above. I shall not burden you with details of these figures but wish to call attention to a summary of them. Out of 1385 samples of grapefruit analyzed in the early shipping (most of them in October) 45 per cent of all samples passed the 7 : 1 standard and 57 per cent passed the proposed sliding scale. Contrasted with this we have 134 samples analyzed in February and March (when the fruit is certainly mature if it is ever going to be) and of these only 59 per cent passed the 7 : 1 test while 83 per cent passed the proposed sliding scale. Thus it will be seen that neither one of the standards is an infallible index to maturity, but that the sliding scale fits much better than does the flat ratio.

An interesting side-light on this subject is obtained if we compare the figures just given with similar figures collected twelve years ago. During the season of 1912-13 the State Experiment Station analyzed a considerable number of grapefruit samples, beginning with the early Fall and following right on through the season. When these analyses are grouped into periods—early and late—and tabulated it is found that of the early samples 83 per cent pass the 7 : 1 standard and 62 per cent pass the proposed sliding scale; of the late samples 95 per cent pass the 7 : 1

standard while only 80 per cent pass the proposed sliding scale. In other words, for those samples, taken twelve years ago, the 7 : 1 standard appears to have indicated maturity more accurately than did the sliding scale. Although I am not drawing any definite conclusions from this comparison, it suggests the interesting possibility that the average composition of our fruit has changed during the past twelve years and that the 7 : 1 ratio which was evolved to fit former conditions no longer is adequate.

Summing up: The standards used for judging citrus fruits are of necessity based on the edibility of the fruit rather than upon any exact measurement of "maturity" since we do not know what constitutes maturity. Definite standards are needed and the most satisfactory one known at present are those upon the acid and total solids content of the juice.

Originally a maximum acid standard was tried but this soon was supplanted by a ratio of total solids to acid. The accumulated experience and data of recent years has indicated that the flat standard of 8 : 1 is satisfactory for oranges but that a flat standard for grapefruit is very unsatisfactory, due to the fact that the edibility of grapefruit depends as much upon its juiciness and the total solids content of its juice as upon the ratio. A sliding scale of total solids and ratio has been found to fit the known facts much better than the flat ratio of 7 : 1 now in use for grapefruit.

In conclusion it may not be out of place to say that the modified sliding scale described in this paper has been unanimously agreed upon by the Fruitman's Club and has been incorporated in a new law which the club is endorsing and hopes to have passed by the present legislature.

#### TENT DUSTING EFFECTIVE AGAINST CITRUS APHIDS

One of the most practical insecticides for the new citrus aphid is nicotine sulphate-lime dust. This can be applied with a power duster and practically a 100 percent kill obtained if the wind is not blowing—to get a thoroly efficient kill it must be absolutely quiet. A wind of as much as four miles per hour (one that will agitate the leaves on the trees without swaying the branches) will interfere with this dusting with a power duster.

Working a horse immediately after it has eaten may cause colic.

# The Citrus Industry

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## GROVE CALENDAR FOR MAY

### Timely Suggestions For Grove Work During the Present Month

Prune late bearing trees as soon as the crop is removed.

If grove is infested with scale and white-fly, spray thoroughly with oil emulsion. White-fly may be kept in check by a fungus parasite; calculate the number of cultures of this fungus that you will need; write to the State Plant Board, Gainesville, for them.

The cottony cushion scale may be controlled by a natural enemy, the Vedalia or Australian lady beetle.

Spray grapes with 4-4-50 bordeaux to control anthracnose and black rot; repeat every two weeks if necessary.

Continue clean cultivation of pecan grove and put the soil in condition for planting velvet beans.

## OUR FERTILIZER NUMBER

Recognizing the importance of fertilization in the program of the successful citrus grower, and particularly the great importance of the mid-summer fertilizer application, The Citrus Industry this month devotes a large share of its space to this important and timely subject. In this issue will be found a number of articles by men of prominence in the industry—men who have made a careful, and in many cases, a life-long study of fertilization in relation to the requirements of the citrus grower. These articles, we believe, are based upon the actual grove experience of the authors and may be accepted as accurate and authoritative.

In the production of citrus fruit of superior

excellence and good appearance, proper fertilization goes hand in hand with effective spraying and other means of disease and pest control. Without proper fertilization, intelligently applied, all other efforts of the grower to produce quality fruit will be largely nullified. For this reason, The Citrus Industry takes great pleasure in presenting the several articles from citrus experts which appear in this issue.

## THE HORTICULTURAL MEETING

The thirty-eighth annual meeting of the Florida State Horticultural Society in Eustis early in April proved to be all that was anticipated in the matter of both attendance and interest. This meeting was fully up to the high standard of former meetings and the attendance attested the continued interest and high esteem in which the work of the Society is held by the horticulturists of the state, among whom the citrus growers are by far the most numerous and important section.

By the practically unanimous endorsement of the proposed "green fruit law" and by the reelection of practically all of the former officers, the membership showed good judgment and assured the continued good work of the Society in the years to come.

The Florida State Horticultural Society is a bulwark of strength to the citrus growers and other horticulturists of the state.

## FERTILIZING CALIFORNIA GROVES

That the question of fertilization of citrus groves is attracting wide attention in California as well as in Florida, is attested by the fact that an important bulletin on the subject has just been issued by the Agricultural Experiment Station of the University of California.

This Bulletin, Circular No. 283, is entitled "Fertilizing Citrus Trees in California," by Robert W. Hodgson, who in his introduction says:

"The annual fertilizer bill of the California citrus fruit growers reaches a total of several million dollars. Surveys indicate that expenditures for fertilizers constitute the largest item in the average citrus orchard management programme, amounting to about sixty dollars per acre per year. They are in many cases higher, not infrequently amounting to as much as one hundred and fifty dollars. These expenditures are relatively large as compared to the practice in other fruit growing industries and indicate that the citrus fruit growers of this state are convinced of the necessity and importance of fertilization as an aid to profitable production. It is believed that there is ample evidence available, however, to warrant the statement that by exercising more discrimination in the selection of fertilizers in accordance with our present knowledge of their effects on citrus trees, the same general results might be had from much smaller expenditures. It is certain that many citrus growers purchase large amounts of fertilizers which, so far as our present knowledge goes, do not pay returns on the investment. It is equally certain that by a greater use of certain fertilizers, many growers might materially increase their orchard yields with profit."



# Satsuma Blossom Festival

By David Holt, Mobile, Ala.

The Satsuma orange has brought a new prosperity to the Gulf Coast counties of Alabama. More than a million trees were in bloom when the several communities in the Alabama citrus belt united in the celebration of the first National Satsuma Blossom Festival, April 15. The program included a band concert, parade of decorated automobiles and industrial floats, a public meeting with addresses, a motor tour through satsuma orchards near Mobile, a pageant by children in Bienville Square and a ball on the municipal wharf, with coronation of the "Queen of Satsuma Land."

The tour through Mobile county's best orchards included a visit to Carol Plantation, where former United States Senator Jonathan Bourne, of Oregon, has 100,000 satsuma trees of various ages, from one to eight years, numerous kumquat and pecan trees, in addition to nursery stock of many kinds and varieties.

Success of the Peach Blossom Festival, of Fort Valley, Georgia, doubtless suggested the idea of a Satsuma Blossom Festival. J. Lloyd Abbot, chairman of the agricultural department of the Mobile Chamber of Commerce and general chairman of the Festival, enlisted the assistance of many communities in the first venture and they have determined to make it a regular annual event hereafter.

Baldwin and Mobile Counties divided the honors of this first festival. Miss Bettie May Fuller, of Foley, was the sponsor from Baldwin and she was chosen as queen. The car which she entered in the parade was given one of the prizes. Spring Hill, in Mobile County, was awarded first prize and Mount Vernon, Second prize, in the decorated automobile parade.

Away back in the long-ago, the Satsuma was cultivated in China and then in other centuries it was brought to a high state of perfection in Japan, from which country it was introduced into America in 1880. The fruit has reached its highest point of quality, productiveness and hardness in that part of the Gulf Coast known as the Mobile Bay District, which includes the counties of Mobile and Baldwin.

The satsuma Orange (*Citrus Nobilis*) was brought to Alabama in 1898, when Samuel White planted numerous Satsuma budded on Citrus *Trifoliata* stock on his place near Bat-

ties in the county of Baldwin. There are now growing in orchards in the counties of Mobile and Baldwin approximately one million Satsuma Orange trees, about 150,000 of which were planted during the winter of 1924-25.

The best Satsuma of the Gulf Coast counties in Alabama is a medium sized orange, slightly flattened at the stem and blossom ends, with thin rind or skin, that peels easily with the fingers. In peeling it, no white fiber adheres to the pulp section and the fruit usually is seedless. The Satsuma is sometimes called the "Kid Glove Orange" because it can be peeled by hand without injuring a kid glove worn during the operation. But it is not to be confused with the mandarin or tangerine, which is similar in appearance, but lacking in some of the other qualities which make the Satsuma the true "Queen of the Citrus World."

There does not seem to be any limit to the number of Satsuma oranges one may eat with safety. The juice is rich in vitamins. Invalids and small children thrive upon it.

Proof of the adaptability of the Satsuma oranges to this region has given an added value to the land, has caused the clearing and planting of many fields that would otherwise have been left for years to wild grass and blackened pine stumps.

Not many years ago the land where the Satsuma grows and thrives was occupied by forests of long-leaf yellow pine. The greater part of this cut-over land is adapted for the cultivation of the Satsuma orange, which does not do well in rich, alluvial soil.

The government soil survey shows that the soil of Mobile county belongs for the most part to two series, the Norfolk and the Orangeburg. The distinguishing feature is the color of the sub-soil, that of the Norfolk being yellow, while the Orangeburg subsoil is red. Of the county's 782,080 acres the Norfolk loam sand is the type of approximately 214,016 acres, Norfolk fine sandy loam, 121,151 and Norfolk sandy loam, 77,808 acres. Orangeburg sandy loam covers about 96,960 acres and the blending of these types of soil with those of other series accounts for much of the remainder.

Actual experience has shown that all of these soils, where not too brok-

en, are adapted to the cultivation of the Satsuma orange and excellent orchards will be found on every one of them as proof of the fact the industry is not limited to any one or two characteristic soils. As a general thing, the question of soil and air drainage (free circulation of air) is of greater importance than that of the soil content.

The estimated Satsuma crop for the Mobile Bay district is 250 carloads, this year.

## MANY FIELD MEETINGS

### PLANNED DURING MAY

Many citrus growers of Florida will have opportunity to study their problems and confer with specialists of the Florida Agricultural Extension Division in a series of meetings that began on May 4 and continue to June 4. Problems of culture, fertilization, disease and insect control, and other matters affecting the citrus industry will be taken up at these meetings, many of which will be field meetings and demonstrations, with a view of better quality production.

The meetings will be in charge of E. F. DeBusk, citrus pathologist for the extension service, and district agents. Meetings in each county will be arranged by the county agent.

Counties in which these field meetings are planned during the month are Volusia, St. Lucie, Palm Beach, Broward, Dade, Okeechobee, Lake, Orange, Seminole, Osceola, Hillsborough, Manatee, Pasco, Lee and Hendry.

A splendid home improvement program has been planned for Okaloosa County also, and a series of meetings will be held in that county during the week of May 11 to 17. They will be under the supervision of Miss Bertha Henry, home demonstration agent, assisted by specialists from the Agricultural Extension Division, both at the College of Agriculture and the State College for Women, and by representatives of the Louisville and Nashville Railway, who will discuss principally the growing and marketing of vegetables and the production of small fruit.

Problems of the home, particularly matters affecting income and social welfare, will be discussed. The meetings will include entertainment, motion pictures, demonstrations and address.

# New Method of Compiling Citrus Statistics

By Marvin H. Walker

The selling of large quantities of oranges and grapefruit to the best possible advantage under fluctuating market conditions requires accurate and minute knowledge of every phase of citrus fruit distribution. The business is complicated by numerous ramifications. Reliable information is essential in the achievement of the best sales results.

Citrus marketing is comparable in some respects to the selling of any other product or commodity. The producer, or his sales agent, must know exactly what he has to sell. This is more difficult to ascertain in the citrus fruit business than with a less variable product. Not only must the citrus sales agent know how many boxes he has to sell, but he must have some definite information regarding the different proportions of their sizes, and their approximate grade as to shape, outer appearance, etc. He must know something of the fruit's carrying quality under different conditions.

Probably more important than anything else in citrus marketing is having a complete knowledge of the extent of the season's supply of fruit, in what quantities this fruit is being shipped to market each day, and what markets are receiving it. The law of supply and demand rules in citrus fruit selling, and he who has the best data concerning present and possible future supplies, has the best opportunity to take advantage of the most favorable market conditions. It is also very important for a sales agent for such a product as citrus fruit to be able to check up on all sales and ascertain such things as average prices for different sections of the country; averages on discounts for decay, etc.

In its work for securing for its grower-members the best possible price for their fruit, the Florida Citrus Exchange, which now represents something like 7,000 cooperative Florida orange and grapefruit growers, has recently established what is known as a statistical department. The function of this department is to secure for the executive officers of the cooperative marketing organization all of the information they require in directing the sale of their portion of Florida's fruit crop.

So far as is known, the Florida Cit-

rus Exchange is the only organization of its kind that has these statistical facilities. It has been able to create a department for this particular work during the past season by reason of its increased crop holdings, making this important service possible without burdensome expense. A complete account of all of the work of this department would be difficult to give. This article attempts to explain only its more important activities.

Records of carload shipments of citrus fruits from the 123 Florida Citrus Exchange packing houses are telephoned by the sub-exchange offices each day to the Tampa headquarters of the organization. A complete tabulation is made in the statistical department of each day's fruit movement, with separate totals for oranges and grapefruit.

To determine the volume of the citrus movement from other than its own sources, the Florida Citrus Exchange each day receives reports from a correspondent at Jacksonville, giving railroad records on the number of carloads of oranges and grapefruit leaving the state that day. From another source it ascertains daily the volume of fruit shipped from the state by water.

Knowing what the state movement is, it can quickly find out the extent of shipments by its competitors by subtracting the totals of its own shipments for that day from the report on the state movement for the same

day.

All of this information concerning shipments of citrus fruit from Florida is tabulated on a daily card report which goes to the officers and managers of the various departments of the Florida Citrus Exchange. This report shows the day's shipments from the state, the Exchange's portion of those shipments, and the volume of "outside" shipments, with a similar record for comparative purposes of shipments on the corresponding day of the preceding season. There is also included on this report totals of state, Exchange and outside shipments for the entire season, up to the date of the report, with a comparative record of the preceding season's shipments up to the same date.

From California the Florida Citrus Exchange each day receives a telegraphed report on the orange movement from that state for the past 24 hours. The New York sales office of the Florida Citrus Exchange keeps the Tampa headquarters advised on receipts of citrus fruits from foreign countries, together with advance information on the forwarding of these foreign supplies. Advantage is taken of United States Department of Agriculture reports for records of citrus shipments from Texas and Arizona to complete the data.

Each Saturday the statistical department compiles a report for the district sub-exchange managers, showing all shipments for the week with



This is the new statistical department of the Florida Citrus Exchange. Frank Lowe, second from the left, is in charge.



the total movement from each sub-exchange for the season, and with the percentage of each sub-exchange of the total Florida Citrus Exchange shipments. A weekly blue print is also issued showing citrus shipments from all sources by rail and water, with percentages of the movement already made by the state, the Florida Citrus Exchange and "outside" shippers, together with an estimated percentage of the fruit which each is still to ship during the season.

One of the important features of the Florida Citrus Exchange statistical department is its tabulating machines. These were recently installed as a result of the growth of the co-operative marketing organization, making it necessary to adopt some means for quickly assembling the data of its various packing house associations and sub-exchanges covering shipments and sales.

After a thorough study of the problems, Business Manager C. E. Stewart decided upon a machine that is used in the auditing and statistical departments of practically every large railroad in the country. The same kind of machine is also used in the census bureau and postoffice department at Washington, where an enormous volume of statistical work must be handled.

The installation in the Florida Citrus Exchange statistical department consists of a sorting machine, tabulating machine and puncher. All are driven by electric motors.

For every carload fruit shipment made by the Florida Citrus Exchange a card is punched in the statistical shipment number for that car, showing the number of boxes, by variety, class, grade and sizes. This card becomes a permanent record, and from the numbers punched on the card any number of combinations can be obtained. The card is filed, indexed according to the association and sub-exchange making the shipment, by a sorting machine which automatically selects any card or group of cards desired.

When any specific detailed information is wanted concerning any phase of shipments, the shipment cards are run through the tabulating machine and the punched holes added up. It is but a few minute's work, for example, for the machine to find out what percentage of any association's or sub-exchange's shipments, during any specified period, were brights, goldens or russets, or to figure up these same averages and percentages on total Florida Citrus Exchange shipments, which are incorporated in the charts and reports reg-

ularly prepared by the statistical department.

When a carload of Florida Citrus Exchange fruit is sold, another card is punched in the statistical department, giving all detailed information connected with the transaction. For the purposes of recording its fruit sales and distribution, the Exchange statistical department has divided the country into five districts, and has listed each state and market in these districts by a number, which is punched on the sales card. It is possible, with these sales cards, to figure up in a miraculously short time, sales by associations, sub-exchanges and the Florida Citrus Exchange in any state or market, at the same time showing the average price received, the amount of decay, discount allowed on decay, etc. Weekly reports are made to Florida Citrus Exchange officers and sub-exchange managers, showing sales, shipments, average prices by class, grades and varieties.

The information on sales and shipments compiled in the statistical department is primarily for the benefit of the Florida Citrus Exchange growers, though the management of the cooperative organization stands ready to show tabulated information of a general character to any grower who is interested in its sales accomplishments.

A voluminous amount of statistics other than those covering actual shipments and sales are also kept by the statistical department, covering the activities of Florida's citrus fruit industry for a number of years.

The officers of the Florida Citrus Exchange are unanimous in their opinion that its statistical department has been of immense help in aiding it to improve citrus marketing. To be able to fully appreciate the value of such information as is compiled by the statistical department requires an intimate knowledge of some of the many problems in citrus fruit selling. In brief, it gives the management of the Florida Citrus Exchange a detailed knowledge of the different phases of crop shipping and marketing, which enables it to direct its activities in such a way as to secure for its growers the best possible returns for their fruit.

#### VALENCIA (SPAIN)

##### ORANGE SHIPMENTS

The first shipment of 1924-25 orange crop was made during the latter part of October, states Vice-Consul M. J. Codoner, at Valencia, Spain, in a report to the Department of Commerce. According to the trade,

practically all the oranges in the Valencia District intended for export have been purchased by the local shippers. The average market price for oranges was 3.00 pesetas per arroba (arroba is 25.35 pounds), though during a short interval in November the price offered for oranges in the groves fell to 2.00 pesetas per arroba (peseta worth 19.30 cents at par). The color of the crop is excellent as the prevailing good weather during the maturing season caused the oranges to take on a brighter golden tint; it is claimed that good prices have been obtained in England because of their attractive appearance. Mr. Codoner states that the new orange crop, therefore, would appear to be excellent both as to quantity and quality.

Notwithstanding the Christmas holidays, great activity was noted in the orange-producing centers, and heavy shipments were made from Valencia to British, German, Belgian, and Dutch ports. The price paid for oranges in the British market dropped to some extent during December, due it was stated to the poor condition in which the shipments arrived in England. The general prices offered were on an average of 17 shillings per case while freight rates to the United Kingdom were quoted at 1 shilling 3 pence (shilling equals 24 cents; pence equals 2 cents).

To December 27, 1924, the following oranges were exported from Valencia to all countries. 1923 shipments are also given by way of comparison:

Cn'ty of Dest'n	1924-25 season	1923-24
Belgium	276,125 cases	171,240 ca
British ports	1,693,637 "	1,509,621 "
Danzig	8,500 "	4,000 "
Denmark	55,766 "	68,984 "
France	16,347 "	41,538 "
Germany	508,163 "	81,400 "
Holland	374,851 "	212,990 "
Ireland	39,797 "	48,483 "
Norway	56,563 "	60,000 "
Sweden	38,430 "	33,750 "
Total	3,123,160	2,222,011

In his report, Mr. Codoner adds that the orange growers and shippers of the Valencia District are continuing to display great anxiety over the fact that the commercial "Modus Vivendi" between Spain and Belgium which expired on December 10, 1924, has not yet been extended nor renewed. Belgium is one of Spain's best customers for oranges, and if the treaty is not extended the consequences are that the Belgians will turn to Italy, Spain's chief competitor. Belgium and Italy enjoy at present a most-favored-nation commercial agreement. In connection with the delay in drafting a new treaty, it is stated that the "Union Nacional de Exportacion Agricola" has sent a strong protest to the Government at Madrid.

# Market Possibilities and How to Attain Them

An Address Delivered by F. G. Hughes to the Chamber of Commerce at Their Monthly Fruit Growers Luncheon, Winter Haven, Florida, April 1

I assure you this is quite a pleasure to speak to you this noon on the subject I have chosen. Every month you gentlemen, most of you growers of citrus fruit, and all of you deeply interested in the citrus industry have a speaker of reputation come to give you some cheering words or general statements covering our present position of affairs. They discuss the growing and marketing of crops, and tell you all about how it should be done. Most of the speakers you have had in the past, have been men of prominence and you had a hard time securing them, but with me it was different. I had a hard time securing you, you see I am an unknown quantity on this subject but I am positive that I have a message that will interest you, therefore will loose no time digging into it.

I will differ quite a good deal with many of the speakers you have had in the past, as it is my intention to point out our market possibilities and how to attain them.

We don't need men to come and tell us that so many million trees produced so many million boxes of fruit last year, or how much cheaper California can ship to New York than we can ship to California, or how the Express Companies also make a cheaper rate coming East than they do going West from the points named, or how many thousand dollars were spent for artificial fruit juices and drinks where no trace of the genuine article could be found. Indeed gentlemen, these facts are worth knowing, but our position demands immediate attention, and what we are now interested in, and that deeply, is what are we going to do with our present crop.

Production of fruit is the same as any manufactured article. Producing it is one thing, but to dispose of it at a profit, is another. The profits obtained should be the results of the quantity and quality produced.

Fixed charges always remain the same, therefore the lower the distribution the greater the cost of producing which in turn automatically lowers the value of the producing plant. The result would be the same whether it was forty acres producing citrus fruit or a manufacturer

making chairs, for your over-head must be charged against the item sold.

Now, we are well aware that we have thousands of young trees that will come in bearing soon. This increased production must be cared for in advance and should not be expected to sell itself after arrival.

The market must be created for them in advance, and here we arrive at a subject I wish to present to you, believing there will be no trouble in convincing you this market is ready and waiting for us in an unlimited volume if we will wait upon it properly. My first step will be to prove this market.

For several years past, my line of work carried me throughout the Central States, and thereby became familiar with the opportunities for distribution of the citrus fruit grown in Florida, and for the reason that I have been a small grower, gave it more than the usual attention. But finding very little of the Florida fruit on the markets in the Central States and at the same time receiving practically nothing from the sale of the fruit grown, it aroused my interest to the point of sending out a questionnaire to twenty of the principal towns in the state of Indiana comprising a population of 810,789. The questionnaire sent out was as follows: Number of Grocery Stores, number of restaurants and cafes, number of hotels, and number of hospitals. These were forwarded to the Chambers of Commerce and the replies which were signed by the Secretaries showed that there were 3,540 Groceries—1,057 Restaurants and Cafes—240 Hotels—55 Hospitals—with 6,102 rooms.

The city of Indianapolis showed 1,400 Groceries—550 Restaurants and Cafes—80 Hotels, and 19 Hospitals, and on a conservative basis, it is only reasonable to presume that the grocerymen would dispose of 700 boxes of fruit a day, Hospitals 19, restaurants and cafes 550, and the hotels 160, making a total of 1,429 boxes per day in the city of Indianapolis, this amount being practically four cars a day, for six days per week would be twenty-four cars per week. Therefore, you will see that with a shipping season from December 1st, twenty-two weeks, would be

328 cars for the city of Indianapolis. On the same basis, the cities referred to would equal 55 cars per week, or 1,210 cars for the shipping season. These twenty cities are only equal in population to about one-third that of the whole state, which in 1920 was 2,930,390. Therefore, you can readily see it is reasonable to presume, we have a market possibility of 3,630 cars in the state of Indiana in twenty-two weeks of shipping season. Compare this with the possibilities in the state of Illinois, with over six million in population, the city of Chicago, alone being almost equal to that of Indiana. Ohio opportunities for marketing are equally valuable. Cleveland, Columbus, and Cincinnati alone equal one-half of the population and possibilities of Indiana.

Gentlemen, we could continue to prove these markets beyond a doubt, and assuming that we have done so, let us turn our attention to how to attain them. I put it mildly when I say, it has long been my opinion that to properly market this product, we must first establish our own warehouses, organize our own sales forces, give prompt and courteous delivery and service, together with more national advertising and demonstrative work. Naturally advertising is the first step in creating a sale, and cannot be dispensed with where large distribution is demanded. It arouses an interest, creates a desire, and carries confidence, paves the way for the sales force which should always follow up and support National advertising, or if you please local advertising done in a National way. Some growers may think they could not afford to pay for advertising, but let us see if he can't. The truth is he cannot afford to do without it. ADVERTISING secures cooperation from the dealer, creates a larger order, and assists in securing a new customer and when done through mediums that enjoy a large circulation and good reputation, the cost would be so small per box the grower could not afford to be without it. (Here was given figures showing cost of National advertising done through two well known publications.)

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# Florida Banana Industry Successful, Says Founder of State Body

The banana industry is a success in Florida according to an address made at Lakeland before the meeting of the State Banana Growers Association by W. E. Bolles, Oldsmar. Mr. Bolles founded the association in 1921 and was its secretary for four years.

The text of Mr. Bolles' speech follows:

It is a pleasure to all who are interested in the progress and prosperity of Florida to witness the success of our banana business. People used to think we could not grow them commercially in Florida, and some yet; but all they have to do, to convince themselves, is to travel a few miles to the nearest banana plantation, and see for themselves. Seeing is believing.

The banana industry is a success in Florida. It is bringing many thousands of dollars of new capital into this state, and this is only a beginning of what it will do in the next five years.

Like every other crop, the banana responds quickly to the right conditions and methods of farming. In our banana plant nursery, where they are planted three or four feet apart, we have had two large bunches grow on one hill or mat of roots, at the same time, both developing in excellent shape. In the plantation we set them ten feet apart in the rows, with the rows ten feet apart also, and there of course they make larger bunches, weighing from 30 to 100 pounds or more.

## Mulch System Poorer

We have tried the mulch system and the clean cultivation system, and we believe, taking everything into consideration, the cultivation system is better. My son, Paul K. Bolles, who is associated with me in business, has watched this matter closely, and agrees with other growers that the banana plant responds to cultivation in money-making results, as good as any other kinds of fruit, and more profitably than many.

The waste materials suitable for mulch should not be thrown away or burned, but can be left to decay.

It pays well to fertilize, using at least one ton per acre per year. The

formula will depend on the kind of soil you have, because muck lands and other lands rich in humus do not need the same amount of ammonia or nitrogen, as other types of soil not so rich naturally in those qualities.

The future of this great food-fruit industry in Florida is safe and sure. The banana plant is at home here, in our delightful semi-tropical climate, where we do not have the extremes of either heat or cold.

I have studied the general situation as regards the banana industry, and wish to invite your attention to the following general conditions, which are having and will have a favorable influence on our business in all parts of Florida, this year and very likely next year also. I do not pose as a prophet, but all of us have the right to draw conclusions from facts ascertained by competent observers who have had years of experience in gathering information, with which the business man can more wisely steer his course and make his future plans accordingly.

## Other Crops Lose

The government crop reports indicate a large decrease in the crops of wheat and corn this year, on account of bad weather conditions. The U. S. Department of Agriculture says the wheat crop will be short about 100,000,000 bushels.

The long-distance weather experts have proved their ability to forecast the weather in a general way for a year or two ahead. This used to seem impossible and was taken with a handful of salt; but if you have kept up with recent developments, you know that they base their prophecies on scientific data, such as the increase of the sun spots, which prevent as much heat being radiated from the sun as usual, and this is reliably reflected by the lowering of the temperatures of the oceans by several degrees, which reservoirs of heat are therefore not able to give off so much heat to temper the atmosphere.

The scientists predict a cooler summer than usual in 1925, taking the United States as a whole, and they further predict a still cooler summer in 1926. They say there will not be

good crops north of the Ohio River, in the great grain states.

I have received a letter from a friend in California, who says they have only had thirteen inches of rain there in the last two years.

Now, taking these statements as all true, and I believe they are, we have a combination of circumstances which would seem to indicate a great opportunity for Florida and all the Floridian products. All of our fruits and vegetables will be in greater demand and at higher prices.

## Equal to Potatoes

The banana is not only a fruit, it is a food-fruit. It has the food value equal to the Irish potato. Therefore, the combination of crop conditions and weather probabilities mentioned, should have the effect of increasing the demand and the price for Florida-grown bananas.

The prices which the commission merchants are receiving from the retail stores for bananas in various parts of the United States, according to the latest reports available April 11 are as follows:

Chicago—Jumbos, 7½c per pound  
Fancy, 7c. Choice, 6c.  
Dallas, Tex.—7c to 7½c.  
St. Louis—7½c.  
Cleveland—6½c to 7c.  
Los Angeles—7c to 8½c.  
San Francisco—Central Americans, 7c to 8½c.  
Hawaiian—7c to 8½c.

The usual retail price in Florida is around 10c to 12c per pound. I had a letter a few days ago from a correspondent in Massachusetts, who says outside of the larger cities, bananas are selling at retail in Massachusetts for 15 cents to 18 cents per pound.

The United Fruit Company, which is the largest corporation in the United States making a specialty of growing, shipping and selling bananas, has recently started a campaign of advertising bananas to make this leading food-fruit more popular than ever before. Just to show what the expert advertising man can do on the subject I will quote from an ad which appeared in the Boston Post, April 7:

"When you are really hungry, taste this taste. Remember back in the

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# Twenty-three Varieties of Citrus Grown on Conway Place Near Vero

From the Vero Press

One of the most interesting spots in the vicinity of Vero is the country place of A. E. Conway, about three miles west of town.

This is only a 40-acre tract of land, but on it grow more different varieties of tropical plants, trees and flowers than any other place of its kind in St. Lucie county.

Mr. Conway came to Florida for the first time in 1882 from New Jersey. The state at that time was nearly all a tropical jungle, but he saw great possibilities in it and returned in 1916 to Lake Worth.

It was through the late Judge J. E. Andrews of Fort Pierce that he finally came to Vero 12 years ago as advisor and demonstrator for the Indian River Farms company. At that time Mr. Conway had his pick of a location for an experimental farm and chose his present abode.

He started in with the sour orange as nearly everybody else does, and tried to see how many different kinds of citrus fruits he could raise. By budding, grafting and seeding he succeeded in getting 23 varieties flourish in his experimental nursery which now has over a thousand trees growing.

One of the most interesting curiosities on his place is a combination orange and grapefruit tree that has nine different kinds of fruits ripening on it at the same time.

He started with the sour orange stalk, and when he wants to see something else on it, he buds a slip to it and in a short time is apt to see any variety of orange, tangerine or grapefruit hanging from the limb.

Among the citrus fruits that have done well in his grove are the Lu Gim Gong, Late Valencia, Pineapple, Navel, Seedless, King, Wild Sour, Temple, Indian River and his unnamed oranges. His grapefruit include seedling, seedless, Conner's Prolific, Marsh Seedless and Duncan. Tangerines and mandarins, wild lemons, his limes and Persian limes also flourish. Guavas of seven different kinds blossom and bear profusely there.

An unusual fruit is the bright red Surinam cherry, which was grown

from a seed imported by the late Senator Quay. It ripens three times a year and is ornamental as well as being especially adaptable for making delicious and beautiful jelly.

Other tropical fruit bearing trees that have proved a success in this soil are the mango, banana, avocado, loquat and the rose apple.

## ✓ Giant Mulberry

The giant mulberry trees are distinctive. They always attract the crows, one of which must pay for the temptation yearly with its life. Mr. Conway says that the only way he can keep them away is to kill the first one that intrudes upon his crop and tie the carcass to a pole that the others in the flock can see what their fate will be if they try to steal the berries. Strawberries, blackberries and dew berries of the most luscious varieties grow luxuriantly in the garden and can be picked daily for family use. The Scuppernong grape grows on a trellis with a white Cherokee rose. One of the hardest edibles on the place is the Chinese yam, a tuber resembling an Irish potato. It is very hardy and needs very little attention for a single yam to grow two feet in length, and when baked or fried proves a most enjoyable feast. There is a little garden patch that yields all of the tomatoes, beans, beets, peas, corn, lettuce, onions and other vegetables that the family can use.

The flowers and ornamental shrubs are a show by themselves. There are roses, geraniums, hibiscus of many hues, double and single, oleanders, wild night blooming cereus, cactus, snake plant with the coral blossom, wandering Jew, oyster plant, black-eyed Susans, ferns, orchids, the creeping eucalyptus, a flowering vine that is particularly fragrant at night, crotons, and all sorts of annuals. There is an immense bamboo plant that grew 45 feet high in five months. Towering cabbage and Royal Palms surround the entire place, giving it a most tropical effect.

Growing plants is not the only thing that Mr. Conway and his two sons do. They have their own little private golf course where they spend their recreation hours. One of their

chief delights is making boats for practical purposes. They have found solid mahogany logs of drift wood which they have taken home from the beach and used in their ship building.

Making matting out of native reeds is another diversion which Mr. Conway finds interesting and profitable.

## Interesting Souvenirs.

He has also experimented with Florida clay to see what kind of results can be obtained from handmade tile, sun-baked brick and adobe products. Before moving to Vero the Conway family resided in Mexico, where they had an interesting career raising fine horses, cattle and growing fruits adaptable to that climate and soil.

After a survey of the premises, Mr. Conway likes to take his visitors into the house where he has some interesting and rare souvenirs of his travels. He has been nearly all over the world and has a collection of things that would be a big drawing card in a museum. His Aztec pottery is over 2,000 years old and he has a dinner plate that was once in the household of the Emperor Maximilian which still shows the coat of arms of the royal family. Several pieces of exquisite lustre ware, the lost art, are in his possession and are too valuable to be used for anything but antiques.

One could spend a whole day enjoying the beauties both out in the grove and garden, and inside the house, where Mr. Conway likes to show the result of his experimental planting, and the pictures and souvenirs of his travels. And when you finally have to go home, he proves to be a generous host and ladens you with bouquets of gorgeous flowers and baskets of luscious fruits, and gives you a cordial invitation to "come again," which you say to yourself you certainly will, for he has more to show and to tell you than you can possibly devour with one trip to this interesting, educational and enjoyable garden spot of Vero.

The best hen is the one that eats the most and turns the food into eggs.

# Will Your Grove Produce Quality Fruit Next Season?

Don't ask your trees to give you more than you give them. If you neglect the fertilizer application, your trees will neglect production. If you expect your trees to produce quality fruit next season—give them quality fertilizer.

ORANGE  
BELT  
BRANDS



*"Quality Fertilizer for Quality Fruit"*





**IDEAL  
SERVICE CONTROL  
INSECTICIDES**

In Ideal Insecticides you get the benefit of years of study in perfecting formulas in which only the highest grade materials are used under supervision of a trained chemist. They have no superior.

Every grower should turn his energies towards Better Quality Fruit. In order to do this Ideal Products and Ideal Service are important factors.

We are State Distributors of Bean Power Sprayers and Dusters leaders in this line throughout the world, also Nash Acme Harrows, Blount Orange Plows and Disc Harrows. The best the market affords in hand Sprayers and Dusters.

We carry the most complete stock of Growers Supplies in the State.



**BEAN POWER DUSTER**  
Dusting with Ideal Dust Materials  
Catalogue on Request



**IDEAL PRO  
REPRE  
YEARS OF COMBIN  
THRU  
EFFICIENT CO-  
OF  
BALAN  
ORGANIZA**

Place Your Order with any  
Fertilizer Salesman or at any o  
houses Thruout

# PRODUCTS PRESENT COMBINED EFFORTS THRU CO-OPERATION OF BALANCED FERTILIZATIONS

For with any Wilson and Toomer  
in or at any of Their Many Ware-  
houses Thruout Florida



**IDEAL**

## SERVICE RESULTS FERTILIZERS

Ideal Fertilizers standard for more than thirty years, are used by many of Florida's largest grove owners in developing some of the most beautiful groves in the State producing "QUALITY FRUIT vs PROFITS".

Use Ideal Fertilizers for Summer Application to your Grove. We manufacture brands especially adapted, unless location and conditions may require formulas different from those suggested in Mr. B. F. Floyd's book "Ideal Fertilizers—Summer 1925", in which event make use of "Ideal Field Service"—the men are trained, experienced and are able to advise the particular fertilizer you need.



Grove of well balanced and well foliated Orange Trees.

### RESULTS COUNT

"It costs more to do without than to buy the best."



Twenty-two

# POWER DUSTING CITRUS GROVES GIVES TWO WEEKS' PROTECTION FROM APHIDS

A close inspection by entomologists of the University of Florida Agricultural Experiment Station of groves a week after dusting with 3 per cent nicotine sulphate-lime dust reveals few aphids. Those found are either winged adults which had come into the grove since the dusting, or their very young larvae, and it is the opinion of these entomologists that little damage will be done in the next week. This indicates that once in two weeks is often enough to dust large bearing trees with a power duster, even when surrounded by untreated groves from which reinfestation may come.

When done in calm weather, either day or night, power dusting kills practically 100 per cent of the aphids at a cost for material of from 4 to 6 cents per tree.

For young trees 10 feet high or less, spot dusting with a hand machine seems to be more economical. For very young trees up to three years of age, dipping infested branches in a bucket containing 1 teaspoonful of nicotine sulphate, one-eighth of a bar of laundry soap per gallon of water is proving to be the most satisfactory. Wind does not interfere.

If nicotine sulphate cannot be obtained, one may soak a plug of tobacco in two gallons of water over night, and the next morning add half bar of soap.

Trees should be gone over at least once each week.

In many groves round oranges are hardening up rapidly and will soon be unattractive to aphids. For this reason tangerines and other citrus of the mandarin group, including satsumas, will need to be watched for several weeks and control measures adopted in cases of infestation. Young trees will need to be protected until June.

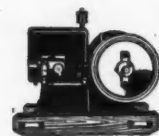
The entomologists have found much poor dust on the market, and are advising growers to purchase only dust guaranteed to be 3 per cent nicotine. The poor dust is giving unsatisfactory results in aphid control, and this is why they are urging that the dust be guaranteed 3 per cent—no more, no less.

If satisfactory dusts cannot be obtained on the market, growers can mix their own by following directions contained under the subject of control measures in Experiment Station Bulletin 174, "Controlling the Citrus Aphid."

## THE CITRUS INDUSTRY MESSINA (ITALY) LEMON CROP REPORT FOR JANUARY, 1925

In a report received in the Department of Commerce, Vice-Cousul A. P. Cruger, at Messina, Italy, states that despite the unusual drought, the trade reports crop conditions as satisfactory and predicts that the harvest of winter lemons will be good. Car loading during December, 1924, amounted to 3,612 for Sicily and 901 for Calabria, compared with 2,540 in Sicily and 542 in Calabria for the corresponding period of 1923.

Less activity is manifest in English and German markets. Orders from Holland, Russia, and the United States have been somewhat more numerous.



Do You  
Need an  
ENGINE

See the easy-starting 1½ H.P.

# CUSHMAN

Compact, Powerful, Smooth-running. Throttle-governed, Hopper-cooled, fewer working parts retaining all the famous Cushman Quality that gives real engine value. Every part readily accessible. Every engine complete with sub-base. Write us for catalog folder.

Sizes 1½ to 20 H.P.

CUSHMAN MOTOR WORKS  
891 N. 21st St., Lincoln, Neb.

OVER  
50,000  
CUSHMANS  
IN USE

Sold by  
Farm & Home Machinery Co.,  
Orlando, Fla.

## ORGANIZE A BAND in your town

OUR SPECIALISTS WILL ASSIST IN ORGANIZING AND EQUIPPING A BAND OR ORCHESTRA FOR YOU.

DISTRIBUTORS OF



M. L. PRICE  
MUSIC CO.  
TAMPA, FLA.

## HOTEL HILLSBORO

Tampa, Fla.

TOP O' THE TOWN

European Plan, Fireproof 300 Rooms With Baths

THE CENTER OF TAMPA

## BUCHANAN & CROWDER

### REAL ESTATE

RESIDENCE, BUSINESS PROPERTY AND ACREAGE

Personal Attention to all Details.

Office—  
302-3 Citrus Exchange Bldg.  
Phone—2752

Tampa, Fla.

## MARKET FOR ORANGES IN NORTHERN IRELAND

Ireland may be said to have no seasons insofar as markets for the sale of subtropical fruits are concerned. In winter and early spring importations are chiefly from Spain, while in summer and fall, they come from Australia and South Africa, reports Vice Consul Russell M. Brooks at Belfast in a communication received in the Department of Commerce. London and Hull, the latter in a minor way, are the principal import markets for Eastern England, as compared with Liverpool and Glasgow for Western England, Scotland and all Ireland. The greater part of the oranges imported into Northern Ireland come via Liverpool. While all sizes of oranges are sold in Northern Ireland, the purchasing power of the working class is limited, and oranges running from 300 to 360 to the case are preferred. Individuals purchase from the quantity view point rather than that of quality. Color is no object, but sweet oranges will make a market for themselves. The Northern Ireland trade absorbs an estimated quantity of from 3,000 to 4,000 half-cases per week. There is no regular market held, but buyers are notified on the arrival of consignments from England or Scotland and gather at Belfast to purchase. Any attempt to sell directly will therefore, be made on unfamiliar ground and can only hope to succeed if the prices are below or can meet Spanish quotations. A lack of cold storage facilities need not be anticipated at present, since all preliminary shipments made must necessarily be in the nature of trials and of small size. It may be remarked however, that fruit brought to Liverpool in refrigerator ships usually commands a premium of about 2 shillings 6 pence per box. Few of the large wholesale fruit firms here have sufficient capital to embark on an importing scheme of outright purchase. Distasteful as this may prove to producers, shipments on consignments will have to be made, as is done even to-day at both Liverpool and Glasgow, with payment delayed until the fruit is marketed. If dealings are made with long established firms, there is little likelihood of loss. It seems improbable, considering the low prices at which Spanish oranges can be laid down in Belfast, that a large direct outlet for American fruit can be established here. During a bad selling season in the United States, however, larger supplies could be marketed at prices corresponding to Liverpool quotations.

## THE CITRUS INDUSTRY

It is difficult to say which is worse, to give good feed to scrub cows or to give scrub feed to good cows.

Twenty-three

Much will be gained if a child's mind is kept on what it is to do rather than what it is not to do.



## SKINNER'S SPECIAL NICOTINE

# Aphid Dust

An extra strength nicotine dust especially effective for the control of Aphids, Leaf Hoppers, Thrips, Squash Bugs, Flea Hoppers, White Fly, etc.

It is chemically treated to give off a stiffling, killing gas the minute it strikes the air. Gets 'em whether the dust has contact or not. Skinner's Special Nicotine Aphid Dust is freshly made in our own chemical plant and comes to you full strength. Is packed in air tight steel drums.

### Prices F. O. B. Dunedin

5 pound cans.....	\$ 1.15	50 pound cans.....	\$ 9.50
10 pound cans.....	2.25	100 pound cans.....	18.00
25 pound cans.....	5.25	150 pound cans.....	26.25
Feeney Hand Duster.....	20.00	With Flexible Connection.....	21.00

Write for Free Dusting Guide.

## Skinner Machinery Company

Chemical Dept. 48 Broadway, Dunedin, Florida.

## BANANAS

### The Most Profitable Crop in Florida!

Florida's Banana Industry is established as one of the most profitable enterprises in this golden state. Profits of \$1,000 and more per acre are attracting men and money.

### You Can Own a Banana Plantation

Our Peace Valley Plantations are available at a reasonable price, and on an easy payment plan. We will plant your WRITE plantation with 2,000 Cavendish Bananas Plants, care BOOKLET for it and market your crops.

### Taylor-Alexander Co., Inc.

Commercial BANANA Plantations  
Winter Haven, Florida





## Fertilize Your Young Trees

Non-bearing trees should be given the last dose of fertilizer not later than about September 20th, says J. G. Grossenbacher noted Florida Horticulturist. In addition to the usual reasons for encouraging these trees to make their final growth early and then become dormant, there is now the aphid to consider. The experience of last winter and early spring has shown that the occurrence of winter growth on young trees favors the development of that pest in that by spring at the time the spring flush comes the aphid is in thriving condition. It is present in sufficient numbers when the spring flush appears to cover all of it in comparatively few days. The pest gets the jump on its enemies and curls all or most of the new growth.

Getting in the fertilizer earlier than usual and then discontinuing the cultivation will help to bring about winter dormancy and hold it there. In most cases a 3-6-5 or a 3-8-5 is suitable for this application. Nearly half the ammonia should be derived from organic materials such as bone, tankage, guano and other manures. The balance may be taken from either sulphate of ammonia or nitrate of soda or both.

The amount per tree should be varied according to the age and size. A one year set tree should have about a pound; one set two years about two pounds, etc. If a young tree is given pounds per application as is represented by the number of years set out in grove form it usually thrives very satisfactorily. In the more fertile sections of the state a smaller amount is enough.

One of the more important items in making the application of fertilizer to non-bearing trees is to spread it fairly evenly over the entire area permeated by the roots. If you are in doubt about that dig a few holes into the ground at various distances from the trunk of average size trees. I measured the roots of many trees last fall that had been set about eighteen months and found them from six to nine feet in length. These were sour-stock trees. That length may be above the average but you will be surprised at the length of them. It is usually wise to spread the fertilizer in at least as wide a circle as the extent of the longest roots. That will enable most of the roots to make their early winter growth in soil that has been fertilized.

### MARKET POSSIBILITIES AND HOW TO ATTAIN THEM

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As an illustration of the results obtained through advertising campaigns, may I take the time to quote to you some statements recently made by Dr. J. T. Dorrance, President of the Campbell's Soup Co. In 1898 their output was 500,000 cans for the entire year. Now 18,000,000 cans are produced in one week. In 1898, the cost of selling was 7½ per cent, and advertising 14 per cent of the selling price. Now, 2½ per cent, is the cost for salesmen, 3 per cent for advertising making the total selling cost 5 per cent, or 2½ per cent less than it cost for salesmen alone, in 1898. Wherever increased production and distribution is required, advertising is the first step which must be followed by intensified sales campaigns and not left to distribution through brokers, jobbers, and commission men.

Gentlemen, I am fully convinced that success to the Florida Growers of Citrus Fruit, depends upon the adoption of a new and better way of marketing our product, which includes more National Advertising,

demonstrative work, ware-houses in the large centers, sales forces working from these ware-houses calling on the trade comprising grocerymen, restaurants and cafes, hotels, hospitals, and fruit stores. The canning industry can also be developed and sold through these same forces. I also want to go on record, as one who believes that each fruit grown has a market, also that we will be able to ship in bulk and to deliver in each different zone in cities the quality of fruit their requirements demand, and when this time is reached the value of groves will soar and the production of citrus fruit will be an industry of high esteem.

### TWO DRAWBACKS

First Girl in Elevator: "Miss S— is a nice girl, but rather loquacious."

Second Girl in Elevator: "Yes; and besides that, she talks too much."—

Albany Evening Journal.

### STAGGERING THOUGHT

"What would a nation be without women?"

"A stagnation, I guess."—Mercury.

Discords spoil a good orchestra—and a good community as well.

### GROWERS

and

### PACKERS

# SUPPLIES

### CAR STRIPS

Cypress or Pine in  
Car Lots or less

### Pearson's

### CEMENT COATED NAILS

All Sizes

### BOX STRAP

In coils and cut to length

### LADDERS

Factory made Spruce  
12 to 30 feet

### CLIPPERS

### NAIL STRIPPERS

### DRY PASTE

Fruit Wraps and

Orange Boxes

### FERTILIZERS

### BLUESTONE

### Fertilizer Materials

### Insecticides

# CHASE & CO.

Sanford - Florida

Ask for our new catalog



**FLORIDA BANANA INDUSTRY  
SUCCESSFUL, SAYS FOUNDER  
OF STATE GROWERS BODY**

Continued from page 17

days when you used to come home from school, just simply starved? Remember how good a slice of bread and jam used to taste?

**Good For Hunger**

"You were hungry—that's why. That's the time to enjoy a ripe banana, when you are really hungry. Next time, between meals, when you feel that you can't last another minute without something to eat, bite into the creamy-ripe, sugar-sweet pulp of a ripe banana.

"There's a taste-thrill for you, and there's nourishment. A ripe banana—one flecked with golden brown—is more nourishing than any other fruit. It is a food sweetened by nature with sugar in its most digestible form.

"Buy bananas by the dozen and let them ripen in your home. You can serve bananas in many tempting ways—on cereals, as deserts, in salads—but best of all, when you are really hungry, peel back the golden, amber-spotted skin and taste the sugar-sweet, satisfying taste of a really ripe banana."

It is the cherished belief of Presi-

**THE CITRUS INDUSTRY**

dent Victor M. Cutter, of the United Fruit Company, that the banana can be made as popular an article of diet as any other fruits on the market, most of which have been advertised into their present position of popularity. His advertising campaign boosting bananas is confined to the New England States for this year, as a test of consumer education, as it is called.

The figures of net earnings for the United Fruit Company for the first quarter of 1925 were in excess of \$6,000,000, being about 25 per cent ahead of the same period in the year 1924. The first three months of the year are ordinarily considered the poorest quarter of the year. Banana profits with this company are ordinarily at the maximum from April to June. Therefore they estimate total net earnings for the first half of this year at over \$15,000,000.

**Estimate of Earnings**

Basing the figures on past records and present conditions in the market, the estimate for net earnings of the United Fruit Company for the entire year of 1925, are between \$21,000,000 and \$22,000,000, which is equal to \$22 per share on each of the \$100 shares of stock of this corporation. They have 1,000,000 shares of stock outstanding. In other words, it is a

Twenty-five

\$100,000,000 corporation. The \$100 shares are selling on the New York Stock Exchange most of the time at prices ranging from \$200 to \$250 per share.

I hope to see the day when we will have something like that in Florida. I thoroughly believe it is not only possible but probable. Today we have a number of banana plantation companies in Florida, which are being properly handled, and which are increasing their acreages in a substantial manner year after year. Some of them are already planting on tracts of land which measure into the thousands of acres. They are the leaders in the banana business of Florida.

Then we have thousands of smaller growers, whose tracts of land range from one acre up to five acres. And I wish to say, the man or woman who has five acres of bananas properly planted and handled on the right kind of soil, with the right kind of general conditions, does not need to worry where his bread and butter is coming from. More than that, he can live in semi-luxury and take a trip to Europe.

"Health is the foundation on which reposes the happiness of the people and the power of the country."—William H. Taft.

**SPRAY NOZZLES  
EVER CLOG?**

Possibly foreign matter in the copper sulphate, as bits of wood or other impurities cause the trouble. This will not happen if you use

**Nichols Triangle Brand  
Copper Sulphate**

(Blue Vitriol)

It is pure, clean and packed in specially made barrels and kegs.

*For Years the Standard*

Large Crystals—Small Crystals—  
Pulverized

**Nichols Copper Co.**

25 Broad St.



New York

**Florida Fruits  
and Flowers**

A Monthly Magazine devoted to diversification in fruit growing and to home and civic ornamentation.

The kind of a magazine you will enjoy in your home. It tells of the different kinds of fruits which can be successfully grown in Florida and it aids with helpful suggestions about ornamentals and flowers for your home or community.

FLORIDA FRUITS AND FLOWERS costs but \$1.00 for twelve months. Pin a check or a dollar to this notice and mail to

**Florida Fruits and Flowers**

**Bartow, Fla.**

Twenty-six

## FERTILIZERS AND THE FERTILIZER INDUSTRY FROM THE MANUFACTURERS VIEWPOINT

Continued from page 9

or only fruit of an inferior quality. Certain other materials if mixed together will liberate the most expensive element, ammonia, while others will revert the available phosphoric acid to insoluble phosphoric acid. Some materials contain ingredients which are harmful to certain plants, such as chlorine, borax, etc., while with certain other plants chlorine, and even a certain amount of borax, appears to be beneficial. Ammonia in all forms must nitrify before the plant can use it. This action is very quick in some instances and very slow in others. The fertilizer manufacturer must, therefore, know what the various plants need, at what time and in what quantity. He must know what effect each fertilizer material will have under a given condition upon each other, and how to so blend them that the finished product will be dependable and uniform. It will therefore readily be seen that the manufacturer must know the soil type and the things grown in the territory covered by him, with a view to the requirements of the thing grown, the effect of climatic conditions upon plant, as well as materials, etc. In short, he must know soil chemistry, plant physiology and pathology, the principles of general and special agriculture, agronomy, general and fertilizer chemistry, and something of a number of other subjects more or less closely related to "Making two blades of grass grow where only one grew before."

Practically all progressive countries now maintain agricultural colleges and experimental stations, and much money is spent in the study of plant life, but even considering all that has been found out about the mysteries of nature, authorities realize that they have touched but the outer edges of agriculture and the feeding plants, and it is believed the future has many wonderful discoveries in store. Fertilizer companies cooperate with these colleges and experimental stations and in Florida specially, many of the field and factory representatives are college men, having received their technical education in school and their practical knowledge in the field. Believing that a company is only entitled to prosper in proportion to the service it is able to render, much money is spent in developing service to the grower, and in cooperation with the various demonstration and county agents in edu-

## THE CITRUS INDUSTRY

cating the grower to produce better results with less money. These field men must, therefore, be well equipped to help, to give dependable advice on what and when to plant, how to cultivate, when and how to spray and what fertilizers will produce the best results for the least money.

Now, as to the industry as a whole. There are more than seven million tons of fertilizer used in the United States, South Carolina and Georgia using practically a million tons each. Florida uses about three hundred and fifty thousand tons, and this quantity will increase as new lands are cleared and the population increases. It is a mistake to think that only poor land needs fertilizer. Some lands are so poor that no amount of fertilizer would make them profitable, and it is an accepted fact that the better the land the more profitable it is to use fertilizer. The various states have laws regulating the manufacture and sale of fertilizer and fertilizer materials. There are as many different laws as there are states. Some forbid what the other states insist upon. Some of these laws were drafted by incompetent people and the very object they had in view is often defeated. The fertilizer manufacturers are realizing that they cannot stay in business unless they produce fertilizers of high quality which give uniformly satisfactory results. In the early days of the industry there may have been, and probably were, worthless articles on the market, but the grower is now justified in placing

his confidence in the product of any standard company, the only difference in the product being that which has resulted from intensive study and thereby a better selection and com-

If You Want a  
**SUPERIOR GROVE**

**Plant**

*Superior*  
*Nurseries*

**Trees**

**M. J. Daetwyler's**

**SUPERIOR NURSERIES**

**Orlando, Fla.**

## Washer Rub Boards



Interchangeable  
for new or old  
**Skinner Washers**

Look over your equipment now and make necessary replacements before the crop starts moving again. If your washers need new rub boards the equipment shown above will fit old or late models and make them almost as good as new.

If you plan any extensions be sure to get our man to see you as soon as possible to avoid delay. There is no obligation.

**SKINNER MACHINERY COMPANY**

World's Largest Manufacturers Packing House Equipment.

48 Broadway

Dunedin, Florida.

bination of materials. The manufacturer really has the grower's interest at heart because unless the grower prospers the manufacturer cannot hope to make sales or make collections.

In conclusion, we as manufacturers of fertilizers believe that we are filling an important place in the commerce of the country. We feel that we are doing our part toward developing industry, and by producing more food and clothing, are doing our part toward elevating the economic conditions of our fellow citizens.

We believe that the industry as a whole has a finer motive than that of making money solely, and it is because of this finer motive that the business is so fascinating, and that we who work in it are willing that the business shall be to us an exacting mistress requiring all our time and effort.

#### PRODUCTION AND EXPORTATION OF ITALIAN FRUITS

Final data covering the production of oranges, mandarines, and lemons in Italy in 1923 has just been published by the Ministry of National Economy, reports consul Harold D Finley, at Naples. The area in Italy devoted to the cultivation of citrus fruits is shown as 108,300 hectares (1 hectare equals 2.47 acres). Of this total only 47,700 hectares are devoted solely to citrus production, while the remainder includes areas in mixed cultivation. Production in 1923 totaled 6,181,000 quintals as contrasted with 6,774,000 quintals in 1922 and a yearly average of 6,942,000 quintals in the period 1914 to 1923. (1 quintal equals 220.46 pounds). Production in 1923 in the principal provinces was as follows:

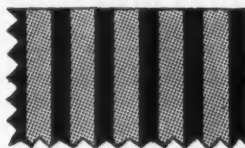
	Lemons	Oranges	Mandarins
Sicily	7,482,516	4,222,870	246,705
Calabria	430,421	1,606,210	60,364
Campania	270,326	1,052,430	133,851
Puglie	167,969	133,851	5,249
Sardinia	36,743	131,226	28,870
Jiguria	36,743	31,494	10,498

The quantity of oranges and mandarins exported in 1923 totaled 813,327 quintals and that of lemons 1,409,214 quintals. Exports for the first nine months of 1924 amounted to 1,026,742 quintals of oranges and mandarins, a figure in excess of the total for 1923, and to 1,285,926 quintals of lemons.

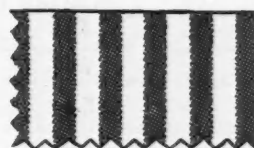
NOTE: Figures in table converted from quintals on the basis of 84 hundredweight to a box of lemons and 78 hundredweight to a box of oranges.

## Men! here it is

### A Fine Cloth for a Gentleman's Work Garment



Morocco Stripe



Express Stripe

You can be proud of a garment made of Stifel's Work Cloth. It is the most refined work cloth on the market today. It comes in two neat and attractive designs, both new and up-to-date.

The Morocco Stripe is a two-tone cloth which has a rich blue effect.

The Express Stripe has a rich, white background with either blue or black stripes.

Garments made of Stifel's Work Cloth not only wear longer than ordinary work cloth materials, but the colors are fast and they can be washed at home indefinitely, which is a big economy to you.

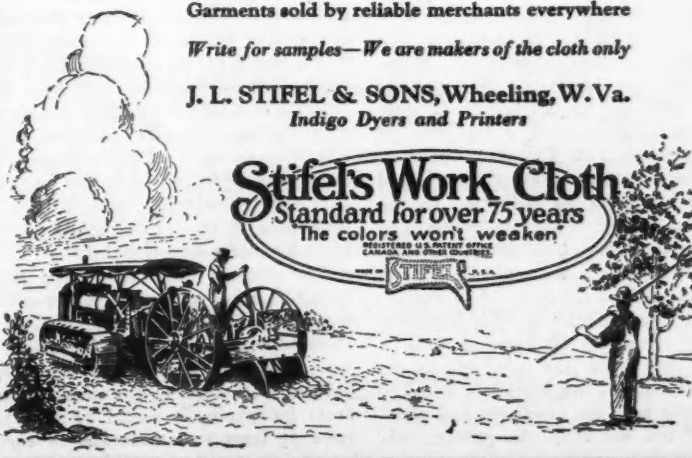
To make sure you get garments made of Stifel's Work Cloth, look for the Boot-shaped Trade Mark on the back of the cloth. The Standard for over seventy-five years. It's your protection and guarantee.



Garments sold by reliable merchants everywhere

Write for samples—We are makers of the cloth only

J. L. STIFEL & SONS, Wheeling, W. Va.  
Indigo Dyers and Printers





# CITRUS COMMENTS

BY

**R. E. Lenfest, Manager Horticultural Department  
Orange County Citrus Sub-Exchange, Orlando**

## The Summer Application of Fertilizer

In general the summer fertilization can be divided into two classes. In most cases three applications are made, so this is the second application so far as its effect on the main part of the next crop is concerned. Where only two applications per year are given this will be the last to effect the fruit to any great extent, for the spring application does not get to act on any but the late fruit.

The two systems call for consideration from somewhat different angles. Where three applications per year are given, the amount of rainfall between the spring application and the summer application must be taken into account, particularly if the spring fertilizer was delayed from any cause. If such a delay occurred it would be well to hold the fertilizer off till later in June or reduce the amount applied in late May or early June.

Where only two applications are given per year there will hardly be much readily available surplus in the soil as the period of time since the last fertilizing has been longer. However, it requires even more careful thought because it must carry the bulk of the fruit practically to maturity.

There are several other things which should be kept in mind when deciding just how and when to make the summer application. The amount and quality of last year's crop should be given careful consideration. If the crop was good and the quality good then treat the trees normally if they are carrying at least a fair crop of young fruit. If the last crop was good in amount but the quality coarse, and there has been no reduction in the amount of fall or spring fertilizer to check the trees somewhat, or any use of bluestone, it would be a good plan to reduce the amount of fertilizer at this application. This is particularly necessary if there is only a light crop set on the trees and no indication of a June bloom.

Along with the condition and quality of the last crop, the present col-

or and general healthfulness of the trees must be observed. If they are excessively vigorous and show any tendency toward dieback reduce the amount of fertilizer and apply bluestone, provided this was not done at the last application.

In considering the present condition of the trees, the time the last crop was picked, must not be forgotten while checking up on the rainfall and other things. The early picked trees have had time to make whatever recovery they are going to make. Wherever tangerine trees, or in fact any citrus trees, were in unthrifty or rundown condition, showing lack of nourishment, and were given an extra application of castor pomace, or some other material to build them up, they should receive the regular amount of fertilizer this summer. If the trees were in an over ammoniated condition the above will not hold true.

The report from most sections is that the next crop will not be any larger than that of the season just closing, and quite likely, not as large. As to getting a June bloom no one can tell whether or not it will show up. When there has been a dry spell in the spring there is probably nothing better to do to induce a June bloom than to do as near nothing as possible, so that the shock of the rains can have full effect on the trees.

In deciding on the amount of fertilizer to use per tree it is well to remember that different varieties and different root stocks require different amounts of fertilizer. It is particularly necessary to use more fertilizer on tangerines and grapefruit than on oranges—the trees being of the same size. Perhaps the safer way to state would be to say that the oranges require less fertilizer than the tangerines and grapefruit. There is also a difference in the root stocks which must be taken into account.

The sources from which the fertilizer is made are imported, particularly in the summer application. Probably the best all round fertilizer would be one with half the ammonia derived from organic sources and half from inorganic. It would be well to have at least two materials in each

class in making up the ammonia. Steamed bone, raw bone, goat manure and other high grade organic sources should be used to make up about half the ammonia as stated above. Nitrate of soda and sulphate of ammonia to be used in making up the inorganic part with perhaps a little more from the nitrate of soda than from the sulphate of ammonia.

As to the formula, a fertilizer carrying 3 per cent ammonia will come nearer filling the needs of most groves than any other. In some cases a 2 per cent ammonia should be used and in a few the trees will require 4 per cent ammonia.

8 per cent phosphoric acid should fill the needs of the average grove for summer application.

There will be more variation in the potash than in any other part of the analysis. Probably 5 per cent to 8 per cent will cover the average. In some cases 10 per cent may be advisable. Where only two applications of fertilizer are given larger amounts will be necessary and it may be well to use 8 per cent or 10 per cent of potash for whatever effect the potash has on the fruit will have to come largely from the summer application.

The above may practically cover one half of what is necessary to do to get good results from the fertilizer. The other half is in the way it is applied. It should be spread evenly, not in narrow bands or bunches around the trees, and cover the ground just a little farther than the ends of the roots. If they meet in the middles then broadcast. Putting fertilizer too close to the trees is often the cause of trouble even when only moderate amounts are used.

Young, non bearing trees should have about a 4-8-3 with the ammonia made half from organic sources. If the trees are extra vigorous or there has been any tendency toward dieback a 3-8-5 with the same balanced ammonia stated will be better than the 4-8-3.

## Aphids

Very recently some fungus or bacteria or something else has caused the aphids to disappear in a short time. They may do as in the past two

years, causing little damage throughout the summer and they appearing again in the fall. If they leave the trees alone for the summer period we should give special attention to the damaged trees and get what growth we can on them to be ready for whatever they may do in the fall.

#### Rust Mites

Now is the time to begin watching for rust mites. So far they are probably not very numerous on the young fruit but they must be looked for every week or ten days if the grower is to have bright fruit. Be sure the mites are there before you dust or spray and when you go after them you must do thorough work in order to get paying results. Two thorough dustings a week or ten days apart should give very good results. If you dust be sure to use a very fine dust and use enough of it to cover all trees thoroughly.

#### WE DON'T GUESS

A Chinese newspaper contains this letter from an applicant for work:

"Sir—I am Wang.....I can drive a typewriter with good noise and my English is great....."

My last job has left itself from me, for the good reason that the large man has dead. It was on account of no fault of mine. So, honorable sirs, what about it. If I can be of big use to you, I will arrive on some date that you should guess."

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of August 24, 1912, of The Citrus Industry, published monthly at Tampa, Florida, for April 1, 1925.

State of Florida,  
County of Hillsborough.

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared S. L. Frisbie, who, having been duly sworn according to law, deposes and says that he is the editor of The Citrus Industry, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1—That the names and addresses of the publisher, editor, managing editor and business manager are:

Publisher, Associated Publications Corporation, Tampa, Florida.

Editor, S. L. Frisbie, Tampa, Fla.  
Business Manager, S. L. Frisbie, Tampa, Fla.

2—That the owners are:  
Associated Publications Corporation, Tampa, Fla.

S. L. Frisbie, Tampa, Fla.  
S. Lloyd Frisbie, Tampa, Fla.  
B. L. Gable, Tampa, Fla.  
F. L. Skelly, Orlando, Fla.  
Frank Kay Anderson, Winter Park, Fla.  
B. C. Skinner, Dunedin, Fla.  
F. P. Wall, Tampa, Fla.

3—That the known bondholders, mortgages and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities, are:

Mergenthaler Linotype Co., Brooklyn, N. Y.

S. L. FRISBIE, Editor.

Sworn to and subscribed before me this 2nd day of April, 1925.

(SEAL)

JAMES W. GRAHAM,  
Notary Public.

# Citrus Growers

## MARKETING THEIR FRUIT

THROUGH OUR ORGANIZATION THIS  
SEASON

# Have Received

ACCOUNT SALES AND

# Their Money

WITHIN APPROXIMATELY

# Two Weeks

AFTER DATE OF SHIPMENT

If you are interested in good service from tree to market, the most net dollars out of your fruit, and prompt returns, write Orlando office for information.

# Chase & Co.

MARKETING AGENCY FOR  
INDIVIDUAL GROWERS AND ALSO  
FOR ASSOCIATIONS

MAIN OFFICE—ORLANDO

## American Grapefruit Growing in Demand Abroad

There has been a remarkable growth this past winter in the popularity of American grapefruit in England and Scotland, reports Edwin Smith, foreign representative of the United States Department of Agriculture. Although London is the center of grapefruit distribution in Europe, direct shipments have been made also to Glasgow and Liverpool.

The wholesale trade in cities like Manchester and Birmingham have stated to Mr. Smith that three years ago only the fancy fruiterers in the better shopping districts were customers for grapefruit. During the past winter the small green grocers have been putting in the fruit in response to demand from both city and suburban residents.

Some very fine fruit has been re-

ceived from Florida, and there is considerable preference for this fruit as compared with that from South Africa. Grapefruit from Arizona is also well liked because it is seedless and sweet. Although some customers like a russet fruit, the trade preference is strongly in favor of brights and sizes running 80 and 96 to the box.

A few British fruit distributors are advertising grapefruit through posters and the daily newspapers, but grapefruit advertising is not receiving the attention that it should receive in Great Britain, Mr. Smith says. The Fruit Trades Federation is spending approximately \$150,000 a year in its "Eat More Fruit" campaign on oranges, apples, bananas and other fruits, and this is indirect-

ly increasing grapefruit consumption. Advertising contributions, however, are on the basis of 1 cent per package on all fruits imported, and the present contributions from grapefruit receipts are not great enough to justify special posters and window strips for this fruit.

If the American grapefruit industry could arrange for a special advertising fund, Mr. Smith says, the Fruit Trades Federation could administer the money in an effective manner toward increasing grapefruit consumption. The Federation is working in close cooperation with retailers in Great Britain, so that a good opportunity exists for American distributors to reach the entire retail trade through the Federation.

## Fruit Prematurely Advanced

Reports from field stations of the Weather Bureau of the United States Department of Agriculture show that March was mild in all parts of the country. The middle portion of the month was rather cold in the northern Plains States, temperatures as low as 20 degrees below zero occurring at some places, but otherwise the weather was persistently mild. In Central and Northern States east of the Rocky Mountains the temperature for the month averaged generally from 4 degrees to 8 degrees warmer than normal, and in the Southeast from 1 degree to 3 degrees warmer. Miami, Fla., was the only station reporting a cooler March than usual. While the temperature about the middle of the month fell to 20 degrees below zero in northern North Dakota, this was by no means the record low temperature for March, as 40 degrees below zero occurred in this month at Havre, Mont., in 1897. February of this year was also warmer than normal in all parts of the country; twice

before (1918 and 1921) during the last ten years both February and March have been generally mild.

In contrast to last year, the persistently mild weather has prematurely advanced fruit trees, with the earlier varieties blooming at the close of March as far north as central Maryland and the immediate Ohio Valley. Last year March was cool and, at the close of the month, early fruit had not begun to bloom farther north than eastern North Carolina and southern Tennessee. In 1921, when February and March were both warm, fruit was somewhat more advanced than during the present year, but killing frost the latter part of March did much damage in South-Central States, while harm occurred farther north in April. At the close of March, this year, the season was about two weeks earlier than the average throughout the central portions of the country, with both vegetation and farm work well advanced. Some corn has been planted as far north

as North Carolina and southern Kansas, and cotton planting has begun locally to central Arkansas.

The month, as a rule, was drier than normal, especially in the South. There was somewhat more than the usual amount of precipitation in the north-western Great Plains, southern California, locally in the middle Plains, and at most points in the Northeastern States north of Pennsylvania. Very little rain occurred, however, in the Southern States, where many localities reported less than 0.5 inch, with some stations in Texas receiving amounts too small for measurement during the entire month. Severe drought continued in the Southeast, but soil moisture was still sufficient for present needs of vegetation in most sections of the Southeast. Heavy snows fell in some Northeastern States, more than 20 inches occurring in portions of Vermont, and the falls were rather heavy also in the northern Rocky Mountain and Great Basin areas.

### CITRUS MELANOSE CAN BE CONTROLLED BY SPRAYING

Melanose, a serious disease of oranges and grapefruit, can be controlled by a single application of Bordeaux-oil emulsion spray, according to citrus pathologists of the Agricultural Extension Division of the University of Florida. This spraying should be done before the beginning of the May rains, and, if pos-

sible, by the middle of April. The spraying should begin when the fruit is about the size of a pea.

Melanose is a fungous disease and the spray to be used is the standard 3-3-50 Bordeaux mixture plus 1 per cent oil in the form of oil emulsion.

Rust mites and scale insects should be controlled later, or the value of the melanose control will be nullified.

Best results have been obtained

where only the fruiting branches have been sprayed. The trunk and large limbs should be left unsprayed to preserve fungous enemies of scale insects, which greatly increase during the rainy season and help keep scale damage under control. If the whole trunk is sprayed these fungous enemies are killed, and the effect of the scale in succeeding weeks is worse.



# RUST MITES

Now present in many groves. Are you prepared to take prompt Control Measures for the protection of your fruit? This insect multiplies and spreads with great rapidity and the damage is quickly done.

## SCHNARRS Superfine Dusting Sulphur

An effective and economical remedy. Or, if you prefer spraying—

## SCHNARRS High Test Lime Sulphur Solution

will give results. If scale is to be considered in addition to Rust Mites

## SCHNARRS Oil and Sulphur Mixture

will get them both. Our several locations insure quick deliveries. Also a full line of HAND and POWER SPRAYERS and DUSTERS immediately available, together with all ACCESSORIES and INSECTICIDE MATERIALS.

## J. SCHNARR & COMPANY

Manufacturers of Florida's Standard Oldest Line of Spray.  
Schnarrs Standard Dust Mixtures.

Orlando, Florida

## Protect Your Grove Investment

Your citrus grove represents an investment you must protect. The profit you make on your investment comes from either the fruit you sell or from the sale of the grove itself. Run-down trees produce poor quality fruit—and it's the quality that determines your profit. Also, if you place your grove on the market, you'll probably have to sell at a sacrifice if trees have been neglected. You lose either way!



*Make Every Acre Do Its Best*

## Good Fertilizer is Essential

The well-kept grove is most profitable. There is perhaps no other single factor more essential to the health and vigor of your citrus trees than good fertilizer. Quality fruit—the kind that brings top market prices—is the product of the well-fed tree.

Use Armour's Big Crop Fertilizers on your citrus trees this summer. They include formulas and analysis to suit every grove requirement. Descriptive booklet free on request.

## Armour Fertilizer Works

Jacksonville, Fla.



#### BANANA DISPLAY ATTRACTS ATTENTION

Pictured here we have the Taylor-Alexander Co.'s exhibit which attracted great attention at both the South Florida Fair at Tampa and the Orange Festival at Winter Haven. It was this display that attracted the attention of Roger Babson and Governor John W. Martin, of Florida, on their tour of the city at the Orange Festival. The picture in the back of the booth shows the location of the plantations and how they will appear when fully planted.

## Over Ten Years of Satisfactory Service to the Growers of Florida

Manufacturers of

## High Grade Fertilizers

for Citrus Trees and Vegetables

## West Coast Fertilizer Company

J. H. Blake  
President

E. H. Folk  
Vice-President and  
General Manager

R. B. Campbell  
Sec'y and Treasurer

Office—Third floor Krause Building

Factory—35th St., and 6th Avenue

Tampa, Florida

## Myriads of Aphids Were April-fooled!

Last month was a serious month for many a citrus grower. Thousands of fine young trees were on the brink of destruction by aphid infestation. Fortunately these growers called upon the Peninsular Chemical Company for advice and assistance.

The result of such judgment is that today these great groves stand thoroughly clean. And under continued watching they will produce high-dollar fruit this coming season.

How is YOUR grove today? Your truck crops? Remember that

**EMULSO**

**Kills White Flies and Scales**

And the makers of Emulso are always ready to serve you on any problem of crop protection.

Write, wire or 'phone your needs today to "the company that sells RESULTS."



"No nursery tree is a first-class tree unless budded from a bearing tree of a known quality and quantity of production."

## Look to the Foundation

Some growers wonder why their groves do not produce as fine a quality of fruit and bear as prolifically as those of their neighbors.

They argue, "I use the same fertilizer, and I cultivate carefully—my spraying and dusting operations are done correctly—but somehow I never get as many boxes nor as fine a quality as that fellow across the road."

The first step in producing fruit is in procuring the finest trees obtainable. True PEDIGREED nursery stock is best.

If you compare the OCKLAWAHA PEDIGREED method of nursery propagation with other methods—if you compare the fruit produced on OCKLAWAHA PEDIGREED trees with that produced on others, the superiority of OCKLAWAHA PEDIGREED TREES will be sufficient proof that they are the kind of trees that you should plant in your grove.

## Ocklawaha Nurseries, Inc.

**Pedigreed Citrus Trees**  
**Lake Jew, Florida**

Phone Victoria  
Thru Orlando

Telegraph  
Zellwood

Write today for our price  
list and Book of Truth for  
Planters of New Groves.  
FREE.



# Boosting Florida Citrus Fruits

One of the citrus growers of Florida who is not only a great believer in the potential possibilities of the state, but who is demonstrating his purpose to expand citrus consumption in the north is Mr. F. D. Waterman, of Waterman fountain pen fame who some years ago built the Fountain Inn, a magnificent tourist hotel in Eustis.

The Fountain Inn each winter season is the haven of a class of northern tourists who seek freedom from the gay life of many Florida resort towns. Here in an atmosphere of refinement among the beautiful highlands of Lake County amid scenes

establishments in Florida if put in vogue.

Each day Mr. Waterman has picked from his own grove the choicest of oranges and grapefruit and has a generous supply placed on the hotel desk for the free use of his guests. Each evening two immense fruit punch bowls are set out in the lobby for the use of the guests, orange juice in one, grapefruit juice in the other.

But the most remarkable service which Mr. Waterman performs in expanding the use of Florida citrus is to pick, wrap, box and deliver to the express office one or two boxes of

each of the large staff of his hotel employees a box of fruit to be shipped to relatives or friends in the north, in many cases Mr. Waterman himself paying the expressage on the fruit.

If a better plan for boosting Florida citrus fruits has been adopted by any Florida grower or Florida booster The Citrus Industry would be pleased to learn of it.

## ENGLISH PER CAPITA

### FRUIT CONSUMPTION

The Fruit-Grower (London), of February 19, 1925, p. 280, states that figures have been issued by the Fruit Trades' Federations concerning the consumption of fruit per head in Great Britain during 1924. Apples were the most popular fruit; it is estimated that the last year each person ate on an average 85 or approximately one apple every four days. Oranges came next in favor, the average consumption per head being 53—just over one week. Twelve lemons per head were consumed, and a quarter of a grapefruit. Mr. Gordon Boggan is quoted to the effect that the British consumption figures for past year when read comparatively reveal a remarkable tendency toward fruitarian health principles by the English people. As many as 10 apples more were eaten per head in 1924 than in 1923. Though orange imports were slightly less, more oranges were eaten as they were received in better condition. Lemons also advanced a few points, and grapefruit in spite of its low average really came into its own, declares Mr. Boggan. The British public spent more than £1,000,000 more on fruit in 1924 than in 1923.



FOUNTAIN INN, EUSTIS, FLORIDA

Headquarters of the Thirty-Eighth Annual Meeting of the Florida State Horticultural Society

of tropical beauty where the balmy air and the call of nature with its wild life, fishing, boating, bathing and motoring tend to the relaxation of over-taxed bodies and shattered nerves, hundreds of northern business men and their families spend the winter season.

Mr. Waterman has inaugurated an innovation in hotel service that would redound to the credit of other hotel

fruit ready for shipment to the friends of each hotel guest—and this added service of dispensing oranges, grapefruit, punch and boxes of fruit is all gratis. What better plan could be adopted to educate the northern palate to the advantages of the daily use of Florida's juicy citrus fruit.

In addition to the fruit thus distributed to the hotel guests, Mr. Waterman each year presents to

## THE ANGE BILT

Orlando's Most Distinctive Hotel

Fireproof—Every room with private bath—Fireproof

Excellent Dining Room Service 10th Floor

"The Height of Hospitality"

Orlando, Florida.

Arthur F. Landstreet, Manager



A good crop next Fall  
means fight aphis now  
--Dust and Spray

Dusts and insecticides sold by "Gulf" are  
up to the Gulf standard of quality.

**THE GULF FERTILIZER CO.**

603 CITIZENS BANK BLDG. TAMPA, FLA.

Quality Fertilizers

Quality Service

## DUSTING SULPHUR

FOR CONTROL OF

Rust Mite, Red Spider, Powdery Mildew, Cotton Flea  
and Other Pests

"ANCHOR" BRAND SUBLIMED VELVET FLOW-  
ERS OF SULPHUR

SUPERIOR QUALITY EFFICIENT AND  
ECONOMICAL

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|---|--|
| 1. 100 Per Cent Pure.   | 4. Strongest and Most Lasting Fuming Qualities.          |
| 2. Light and Fluffy.  | 5. Remains Longest on the Trees and Plants.              |
| 3. Extreme Fineness; Greater Covering and Spreading Properties. | 6. Does not Contain Adulterants such as Lime and Kaolin. |

Send for Booklets "The Manufacture and Relative Values of Dusting Sulphurs", "The Truth about Sublimed Sulphur"; also U. S. Gov't Bulletins "Dusting to Control Rust Mite", Dusting and Spraying Charts, and "Control of Cotton Flea".

**STAUFFER CHEMICAL COMPANY OF TEXAS**

Houston, Texas

Manufacturers and Refiners of All Grades of Dusting, Spraying and  
Agricultural Sulphurs

Distributors for Florida

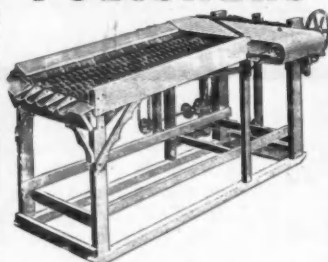
Chase & Co., Sanford  
Hector Supply Co., Miami

Florida Insecticide Co., Apopka  
E. O. Painter Fertilizer Co., Jacksonville



"ANCHOR TO STAUFFER"

## SKINNER POLISHERS



It becomes more and more apparent every season that the packer who ships only carefully prepared fruit gets the top prices.

### Skinner Long Roll Polishers

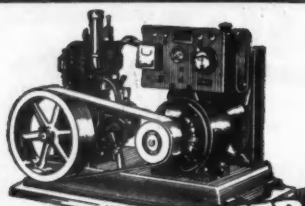
Give an extra fine finish by reason of the extra amount of polishing surface the fruit passes over and the added paraffine applied.

These polishers are built with brushes 6 to 18 feet long and from 2 to 6 rolls wide.

Let us send an experienced packing house man to look over your plant with you. There is no obligation.

### Skinner Machinery Company.

48 Broadway, Dunedin, Florida



## LIGHT and POWER

Better lights and more power at less cost and less trouble. The Cushman is both a light and a power plant. Besides giving you all the electric light you need, it will also operate the pump, wood saw, corn sheller, feed grinder, etc., from the friction clutch pulley.

## CUSHMAN

Price very reasonable and special terms of payment arranged. Send for circular on Light Plants. If interested in prices on engines, ask for Engine Circular.

**12 Months to Pay**

Cushman Motor Works (INC)  
891 N. 21st St., Lincoln, Nebr.

**Southern Water & Supply Co.**  
Distributor  
Tampa, Florida.

"COULD BETTER FERTILIZER BE MADE WE WOULD MAKE IT"

Get January price list Mixed Fertilizers. "SIMON PURE and GEM BRANDS" now ready. QUALITY first, Fair prices. Also insecticides, sprayers, dusters and dusts. E. O. PAINTER FERTILIZER COMPANY, Jacksonville, Florida.

# Conference on Fruit and Rose Stocks

A conference is called by the Federal Horticultural Board at the United States Department of Agriculture, Washington, D. C., for June 29, 1925, at 10 o' clock, a. m., for the purpose of considering the advisability of still further restricting the importation of fruit and rose stocks.

Subsequent to the passage of the Plant Quarantine Act in 1912, the entry of such stocks along with other imported plants was permitted under the condition of certification by competent experts in the country of origin, followed up with such reinspection at point of destination in the United States as could be made by State inspection officials. With the promulgation of Quarantine 37 in 1919, which restricted the entry of most ornamentals, the entry of fruit and rose stocks was continued without additional restrictions to meet what was regarded as a vital horticultural need for such stocks; in other words, it was impracticable to produce them at that time in adequate quantities in the United States. The results which have been obtained under this method of inspection and certification have demonstrated very clearly that the risks remaining after these safeguards have been applied are much too large to warrant the continuance of authority to import such stocks beyond the period of real horticultural necessity. Not only have numerous dangerous pests been intercepted on such stocks, indicating the inadequacy of foreign inspection, but it has developed also that the reinspection at destination in this country can not by any means be depended upon to complete the safeguards against the entry of such pests. That the period of horticultural necessity has now largely passed and that adequate supplies of most such stocks from home sources are either now available or can shortly be made so seems to be a growing conviction on the part of the State and Federal Horticultural experts and also on the part of considerable element of the nursery and other interests concerned in the utilization of such stocks.

The desirability of bringing up this subject at this time for full discussion and decision has been urged by leading nurserymen with respect both to fruit stocks and rose stocks, and has the approval of prominent rose growers. The selection of the date has been made after consultation with the proper officers of the American

Association of Nurserymen, and of the Society of American Florists and Ornamental Horticulturists.

With respect to the possibility of the production in the United States of fruit and rose stocks adequate to meet our needs, it will be recalled that at the public hearing of May for the consideration of restrictions on the entry of nursery stock, etc., and which resulted in the promulgation of Quarantine 37, it was recommended by nurserymen that the Department of Agriculture should undertake a country-wide study of the problem of home production of fruit stocks to determine the practicability of such production and the most favorable conditions from the standpoint of locality, climate, soil, etc. This work, now covering a four-year period, is so far advanced that definite recommendations with regard to particular items can be made.

In accordance with the general policy of the department, where safety permits, it is understood that should a decision be later arrived at to terminate the further importation of any or all of such stocks, an effective date will be fixed which allow a reasonable period for adjustment both in this country and abroad.

## FERTILIZERS AND SOIL BUILDING IN THE CITRUS GROVE

Continued from page 5

at the beginning of the summer rains is the the time to start it. If the volunteer cover crop is not sufficient, plant cow peas, velvet beans, beggarweed or crotolaria. If the soil is apparently dead and will not grow a cover crop, inoculate it by means of a light application of stable compost turned under at once. Think twice before deciding to remove the cover crop for hay.

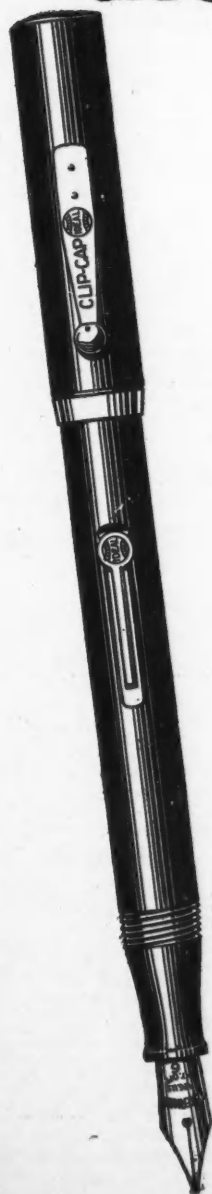
## POWER OF SUGGESTION

Aunt Mandy kept her house spotless, consequently poor Sambo was continuously being nagged about his untidy habits.

One day Sambo came home to find that Mandy had presented him twins. He viewed this as something of a calamity and said rather mournfully: "Mandy I've done cautioned you time an' again to let dat ole Gold Dust stuff alone.—Good Hardware.



# An ink bottle behind the point



A fountain pen is just that—an ink bottle behind the point.

Nearly half a century ago Waterman's made that barrel of a size and shape to be carried in the pocket—and made it refillable—the first practical fountain pen.

The secret of a smooth writing, easy flowing fountain pen lies in the *ink control*. The little black feed of a Waterman's Ideal Fountain Pen does the trick.

Write fast—write slowly—thin lines or thick lines—the ink control is automatic.

**Waterman's  Fountain Pen**

L. E. Waterman Company, 191 Broadway, New York  
Chicago San Francisco Boston London Paris Montreal

# Waterman's

*-is made to write-*

Thirty-eight

# SMALL DEMAND FOR IMPORTED LEMONS AND ORANGES IN SHANGHAI

In China as in the United States lemons are made into beverages and flavorings. Both oranges and lemons are used for making what is called orange and lemon "squash" which in the United States is known as orangeade and lemonade. This drink retails for 25 cents silver. In and around Shanghai several little tea shops have been established where one slice of lemon is served with a cup of tea, for which 10 cents silver is charged. This price is rather high for the native Chinese, and consequently the custom of taking lemon in tea is growing only slowly. It is estimated that probably less than 5 per cent of the imports of lemons and oranges are consumed by the native Chinese. This is explained by the fact that the price of American fruit is too high as compared with that of fruit grown locally.

Prospects for the increased use of oranges and lemons in China are not what might be termed especially encouraging, states James E. Smiley, Assistant Trade Commissioner at Shanghai, in a report to the Department of Commerce. The average Chinese is not only unable to purchase the high-priced imported fruits, but is quite well satisfied with local fruits which include the pumelo, Swatow gum, pear, peach, crab-apple, and the Foochow orange.

On shipments of oranges and lemons to China no consular documents are required. It is necessary, however to obtain from the customhouse an exporter's declaration. This should be filled out and presented to the steamship company who will in turn issue a bill of lading. It is also necessary to obtain a marine insurance certificate and a copy of invoice for all export shipments. The China trade prefers a fully developed lemon with a good yellow color.

Some motorists approach railroad crossings as if they thought the stop-look-listen sign was meant for the locomotive engineer.

## CLASSIFIED ADVERTISEMENTS

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance

## THE CITRUS INDUSTRY

with order. No advertisement accepted for less than 50 cents.

### REAL ESTATE

For Sale—Pineapple land in winterless Florida. \$15 an acre. Almont Ake. Venus Fla.

WANTED—To hear from owner of farm for sale, for fall delivery. O. K. Hawley, Baldwin, Wis.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY. ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

FOR SALE CHEAP—Eleven acres high, rooly citrus land; 4 acres cleared with small house, and large nice bearing orange trees full of fruit. Nicely located near Altamonte Springs, Fla. For particulars write H. A. Lunquire, 41 N. W. 29th St., Miami, Fla.

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

EARLY BEARING Papershell Pecan trees, budded or grafted and guaranteed. Great shortage this year. Write for catalog today. Bass Pecan Company, Lumberton, Miss.

Want to hear from owner having farm for sale; give particulars and lowest price. John J. Black Chippewa Falls.

### NURSERY STOCK

FOR SALE—Cleopatra Mandarin seedlings. September delivery, enter order now. Cavendish banana plants and avocado trees. Write for price list. R. B. Skinner, Hillsboro Hotel, Tampa, Florida.

BANANA PLANTS for sale. Improved Cavendish, Hart, Orinoco, Ladyfinger. Information free. W. E. Rolles, Oldsmar, Fla.

"BOOK OF TRUTH"  
For planters of new groves  
is yours for the asking.  
Write Today.

OCKLAWAHA NURSERIES INC.  
"Pedigreed Citrus Trees"  
Lake Jem, Florida

### POLK LAKE NURSERIES

Offer to the grower young trees of standard variety, backed by 30 years of nursery experience and a guarantee which only honest dealing can justify. For full information address A. H. Sloan, Box 413, Bartow, Fla.

AGENTS WANTED—We want good, reliable parties to act as our agents in their local communities, selling our citrus trees on a liberal commission. A good opening for the person who will devote all or a part of their time working among their neighbors. Lake

### MISCELLANEOUS

LAND INSPECTION, Soil Surveys Appraisals—Consultations, advisory service, all agricultural branches. Specialties: Citriculture, Tropical fruits, Town Planning, Landscaping, Viticulture, Trucking, Livestock. LINDLEY HEIMBURGER, B. S. Agri., M. S. Agricultural Engineer, Chemist, Box 226, Tampa.

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa Florida.

WHITE WYANDOTT Cockerels, regal strain—the best in the country, direct from Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Florida.

SOUTHDOWN SHEEP, White Rocks, Toulouse Geese, Guineas, Angora and Milk Goats, Circular free. Woodburn, Clifton, Va.

AGENTS—Quality Shoes, quick sellers. Big commissions, immediate returns! Repeat orders. Experience unnecessary.

Write full particulars. Tanners Shoe, 3011 C St. Boston.

### FOR SALE

Remington Portable Typewriter with standard keyboard. Has all advantages of larger machine. Ideal for farm and home use. \$60. cash or sold on easy terms. Remington Typewriter Co., 103 Parker St., Tampa Florida.

CONDENSED DATA—on Tung Oil Industry has been compiled by B. F. Williamson and E. L. Lord. By application to B. F. Williamson, Gainesville, Florida, this booklet will be sent Nursery Co., Leesburg, Fla.

### FARM-GROVE-HOME

22 acres large bearing grove; modern two-story, 8 room house, completely furnished on third largest lake in state in thriving town; good roads, church, school; complete line farm implements and tools. P. P. Cloonan, Yalaha, Lake County, Florida.

GROVE HEATERS—Several hundred oil grove heaters at less than one-third original cost and practically new, only used once. Heaters, drums and oil all in good condition. Apply to Lewis E. Klatte, The Gem Nurseries, Lake Jem Florida.

POSITION WANTED—Competent citrus grove superintendent, wants supervision of groves where quality fruit is essential aim. 12 years technical and practical experience. Care Citrus Industry.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Florida.

CONTINENTAL VITALITY CHICKS now hatching. Eleven tested varieties to select from. Your copy of our circular giving full particulars is waiting. May we send it? Address, 332, The Continental Hatchery of Valdosta, Ga.

YOU FLORIDA LAND POOR REAL ESTATE OWNERS—Trade your Florida land for a time tried and road tested car. From Ford to Lincoln; Oldsmobile to Cadillac; Cleveland to Chandler; or Essex, Hudson; Buick or Dodge; all makes of cars. Open or closed cars. Title of land must be acceptable to such legal authorities as Gibbons and Gibbons of Tampa. Lands must have good location, almost any soil, series and type, if other conditions are fulfilled and checked by soil expert such as Lindley Heimburger, Tampa, said to be the leading authority in Florida. P. O. Box H-226, Tampa

Laredo soy beans, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

Wanted AT ONCE few dozen fresh bitter-sour Marmalade Oranges. Price C. O. D.? M. L. Manning, 15 West Chase St. Baltimore, Md.

WANTED to correspond with growers of the Red Guava. Business. M. L. Manning. Qt West Chase Street, Baltimore, Md.

MILLION Porto Rico Potato Plants, \$2.50-1000. W. W. WILLIAMS, QUITMAN, GA.

### Hunting and Fishing

is a monthly magazine crammed full of hunting, fishing, camping and trapping stories and pictures, valuable information about guns, revolvers, fishing tackle, game law changes, best places to get fish and game, etc. Biggest value ever offered in a sporting magazine, only \$1.00 for THREE WHOLE YEARS, or send 25c in stamps or coin for six months trial.



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